SONY

3-283-377-**11**(1)

DVD Home Theatre System

Operating Instructions

HT-7200DH

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Owner's Record

The model and serial numbers are located on the rear of the unit. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No._____

Serial No. _____

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

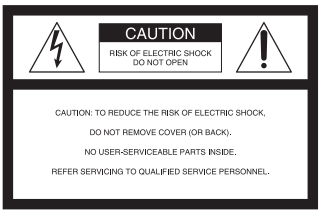
To prevent fire, do not cover the ventilation of the apparatus with newspapers, table-cloths, curtains, etc. And don't place lighted candles on the apparatus.
To prevent fire or shock hazard, do not place objects filled with liquids, such as vases, on the apparatus.

Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

Install this system so that the power cord can be unplugged from the wall socket immediately in the event of trouble.

Batteries or batteries installed apparatus shall not be exposed to excessive heat such as sunshine, fire or the like.

For customers in the United States


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

CAUTION

You are cautioned that any changes or modification not expressly approved in this manual could void your authority to operate this equipment.

Note to CATV system installer:

This reminder is provided to call CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

About This Manual

- The instructions in this manual are for model HT-7200DH.

The HT-7200DH consists of:

- Receiver STR-K7200
- DVD player DVP-NS700H
- Speaker system
  - Front speakers SS-MSP890
  - Center speaker SS-CNP890
  - Surround speakers SS-SRP890
  - Sub woofer SA-WP890

- The instructions in this manual describe the controls on the supplied remote. You can also use the controls on the receiver if they have the same or similar names as those on the remote.

This receiver incorporates Dolby* Digital and Pro Logic Surround and the DTS** Digital Surround System.

* Manufactured under license from Dolby Laboratories. Dolby, Pro Logic, and the double-D symbol are trademarks of Dolby Laboratories.

** Manufactured under license under U.S. Patent #'s: 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,487,535 & other U.S. and worldwide patents issued & pending. DTS and DTS Digital Surround are registered trademarks and the DTS logos and Symbol are trademarks of DTS, Inc. © 1996-2007 DTS, Inc. All Rights Reserved.

This receiver incorporates High-Definition Multimedia Interface (HDMI™) technology. HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

The XM name and related logo are registered trademarks of XM Satellite Radio Inc. All rights reserved.

"x.v.Color" and "x.v.Color" logo are trademarks of Sony Corporation.

"BRAVIA" and BRAVIA are trademarks of Sony Corporation.

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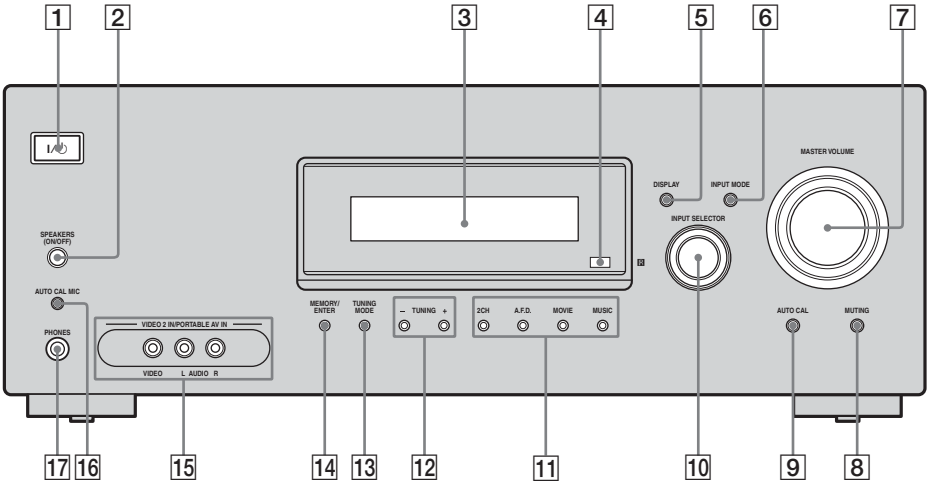
Description and location of parts

Receiver

Front panel



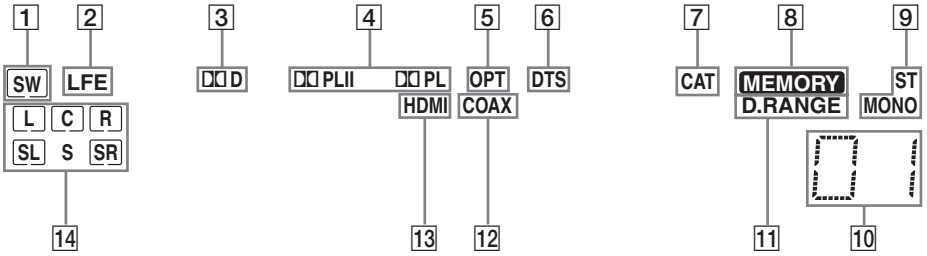
Name	Function
1 **I/⏻ (on/standby)**	Press to turn the receiver on or off (page 28, 36, 37, 51, 85).
2 **SPEAKERS (ON/OFF)**	Press to turn the speaker system on or off (page 17).
3 **Display**	The current status of the selected component or a list of selectable items appears here (page 7).
4 **Remote sensor**	Receives signals from remote commander.
5 **DISPLAY**	Press to select information displayed on the display (page 61, 74).

Name	Function
6 **INPUT MODE**	Press to select the input mode when the same components are connected to both digital and analog jacks (page 70).
7 **MASTER VOLUME**	Turn to adjust the volume level of all speakers at the same time (page 33, 34, 36, 37).
8 **MUTING**	Press to turn off the sound temporarily. Press MUTING again to restore the sound (page 35).
9 **AUTO CAL**	Press to activate the Auto Calibration function (page 29).

continued

Name	Function
10 **INPUT SELECTOR**	Turn to select the input source to play back (page 34, 36, 37, 52, 58, 70, 73, 75).
11 **2CH**	Press to select a sound field (page 48).
A.F.D.	
MOVIE	
MUSIC	
12 **TUNING +/–**	Press to scan a station (page 52, 58).
13 **TUNING MODE**	Press to select the tuning mode (page 52, 58).
14 **MEMORY/ ENTER**	Press to store a station or enter the selection when selecting the settings (page 28).
15 **VIDEO 2 IN/ PORTABLE AV IN jacks**	Connect to a portable audio/video component such as a camcorder or video game (page 25, 34).
16 **AUTO CAL MIC jack**	Connects to the supplied optimizer microphone for the Auto Calibration function (page 30).
17 **PHONES jack**	Connects to headphones (page 80).

About the indicators on the display



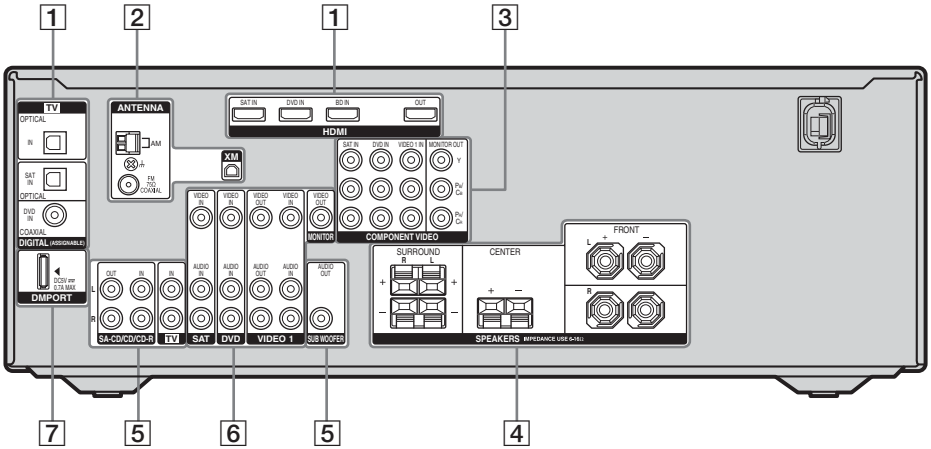
Name	Function
1 **SW**	Lights up when the audio signal is output from the SUB WOOFER jack.
2 **LFE**	Lights up when the disc being played back contains an LFE (Low Frequency Effect) channel and the LFE channel signal is actually being reproduced.
3 **D D**	Lights up when the receiver is decoding Dolby Digital signals. **Note** When playing a Dolby Digital format disc, be sure that you have made digital connections and that INPUT MODE is set to "AUTO" (page 70).
4 **D D PL/ D D PLII**	"D D PL" lights up when the receiver applies Pro Logic processing to 2 channel signals in order to output the center and surround channel signals. "D D PLII" lights up when the Pro Logic II Movie or Music decoder is activated.
5 **OPT**	Lights up when INPUT MODE is set to "AUTO" and the source signal is a digital signal being input through the OPTICAL jack (page 70).

Name	Function
6 **DTS**	Lights up when the receiver is decoding DTS signals. **Note** When playing a DTS format disc, be sure that you have made digital connections and that INPUT MODE is set to "AUTO" (page 70).
7 **CAT**	Lights up when category mode is set to "ONE CAT" during XM Radio operation (page 60).
8 **MEMORY**	Lights up when a memory function, such as Preset Memory (page 54), etc., is activated.
9 **Tuner indicators**	Lights up when using the receiver to tune in radio stations (page 52), etc.
10 **Preset station indicators**	Lights up when using the receiver to tune in radio stations you have preset. For details on presetting radio stations, see page 53.
11 **D.RANGE**	Lights up when dynamic range compression is activated (page 41).
12 **COAX**	Lights up when INPUT MODE is set to "AUTO" and the source signal is a digital signal being input through the COAXIAL jack (page 70).

continued

Name	Function
13 **HDMI**	Lights up when the receiver recognizes a component connected via an HDMI IN jack (page 21).
14 **Playback channel indicators**	The letters (L, C, R, etc.) indicate the channels being played back. The boxes around the letters vary to show how the receiver downmixes the source sound.
L	Front Left
R	Front Right
C	Center (monaural)
SL	Surround Left
SR	Surround Right
S	Surround (monaural or the surround components obtained by Pro Logic processing)
	Example: Recording format (Front/Surround): 3/2.1 Sound Field: A.F.D. AUTO

Rear panel



1 DIGITAL INPUT/OUTPUT section

	OPTICAL IN jacks	Connects to a DVD player, etc. The COAXIAL jack provides a better sound quality (page 18, 23, 24).
	COAXIAL IN jack	
	HDMI IN/ OUT* jacks	Connects to a DVD player, Blu-ray disc player, etc. The image is output to a TV or a projector while the sound can be output from a TV or/and speakers connected to this receiver (page 21).

2 ANTENNA section

	FM ANTENNA jack	Connects to the supplied FM wire antenna (page 27).
	AM ANTENNA terminals	Connects to the supplied AM loop antenna (page 27).
	XM terminal	Connects to the XM Mini-Tuner and Home Dock (not supplied) (page 57).

3 COMPONENT VIDEO INPUT/ OUTPUT section

Green (Y) Blue (P_B/C_B) Red (P_R/C_R)	Y, P_B/C_B, P_R/C_R IN/OUT* jacks	Connects to a DVD player, TV, satellite tuner, etc. You can enjoy high quality image (page 18, 23, 24).

4 SPEAKERS section

+ –	Connects to the supplied speakers (page 16).
+ –	

5 AUDIO INPUT/OUTPUT section

White (L) Red (R)	AUDIO IN/ OUT jack	Connects to a Super Audio CD player, etc. (page 19).
Black	AUDIO OUT jack	Connects to the supplied sub woofer (page 16).

continued

6 VIDEO/AUDIO INPUT/OUTPUT section

White (L) Red (R)	AUDIO IN/ OUT jacks	Connects to a VCR, DVD player, etc. (page 18, 23, 24, 25).
Yellow	VIDEO IN/ OUT* jacks	

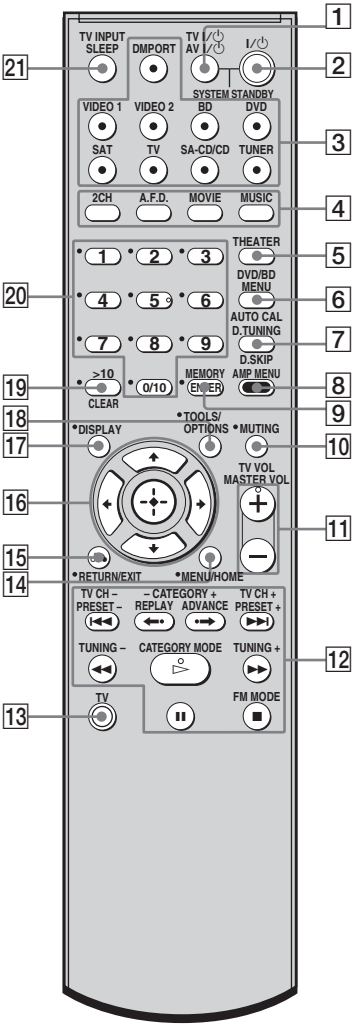
7 DMPORT

	Connects to a DIGITAL MEDIA PORT adapter (page 72).

* You can watch the selected input image when you connect the HDMI OUT or MONITOR OUT jack to a TV (page 18).

Remote commander

You can use the supplied RM-AAU021 Remote Commander to operate the receiver and to control the Sony audio/video components that the remote is assigned to operate (page 76).



Name	Function
1 **TV I/⏻ (on/standby)**	Press TV I/⏻ and TV (13) at the same time to turn the TV on or off.
AV I/⏻ (on/standby)	Press to turn on or off the Sony audio/video components that the remote is assigned to operate (page 76). If you press I/⏻ (2) at the same time, it will turn off the receiver and other Sony components (SYSTEM STANDBY). **Note** The function of the AV I/⏻ switch changes automatically each time you press the input buttons (3).
2 **I/⏻ (on/standby)**	Press to turn the receiver on or off. To turn off all Sony components, press I/⏻ and AV I/⏻ (1) at the same time (SYSTEM STANDBY).
3 **Input buttons**	Press one of the buttons to select the component you want to use. When you press any of the input buttons, the receiver turns on. The buttons are factory assigned to control Sony components as follows. You can change the button assignments following the steps in "Changing button assignments" on page 76.

Button	Assigned Sony component
DMPORT	DIGITAL MEDIA PORT adapter
VIDEO 1	VCR (VTR mode 3)
VIDEO 2	VCR (VTR mode 2)
BD	Blu-ray disc player
DVD	DVD player
SAT	Digital Satellite Receiver
TV	TV
SA-CD/CD	Super Audio CD/ CD player
TUNER	Built-in tuner

Name	Function
4 **2CH**	Press to select a sound field.
A.F.D.	
MOVIE	
MUSIC	
5 **THEATER**	Press to enjoy optimal image suited for movies and to output the sound from the speakers connected to this receiver automatically. **Note** This button will only function if your TV is compatible with Theater Mode. Refer to the operating instructions supplied with the TV for details.
6 **DVD/BD MENU**	Press to display the menu of the DVD or Blu-ray disc on the TV screen. Then, use ↑, ↓, ←, → and ⊕ (16) to perform menu operations.
AUTO CAL	Press to activate the Auto Calibration function.
7 **D.TUNING**	Press to enter direct tuning mode.
D.SKIP	Press to skip a disc when using a multi-disc changer.
8 **AMP MENU**	Press to display the menu of the receiver. Then, use ↑, ↓, ←, → and ⊕ (16) to perform menu operations.
9 **ENTER**	Press to enter the value after selecting a channel, disc or track using the numeric buttons of the TV, VCR or satellite tuner.
MEMORY	Press to store a station.
10 **MUTING**	Press to turn off the sound temporarily. Press MUTING again to restore the sound. Press MUTING and TV (13) at the same time to activate the TV's muting function.

continued

Name	Function
11 **TV VOL +[a]/–**	Press TV VOL +/– and TV (13) at the same time to adjust the volume level of the TV.
MASTER VOL +[a]/–	Press to adjust the volume level of all speakers at the same time.
12 **I◄◄ /►►I[b]**	Press to skip a track of the CD player, DVD player or Blu-ray disc player.
REPLAY ←• / ADVANCE •→	Press to replay the previous scene or fast forward the current scene of the VCR, DVD player or Blu-ray disc player.
◄◄/►►[b]	Press to – search tracks in the forward/ reverse direction of the DVD player. – start fast forward/rewind of the VCR, CD player or Blu-ray disc player.
▷[a][b]	Press to start playback of the VCR, CD player, DVD player, or Blu-ray disc player.
II[b]	Press to pause playback or recording of the VCR, CD player, DVD player or Blu-ray disc player. (Also starts recording with components in recording standby.)
■[b]	Press to stop playback of the VCR, CD player, DVD player or Blu-ray disc player.
TV CH +/–	Press TV CH +/– and TV (13) at the same time to select preset TV channels.
CATEGORY +/–	Press to select a category for XM Radio (page 60).
PRESET +/–	Press to select – preset stations. – preset channels of the VCR or satellite tuner.
TUNING +/–	Press to scan a station.
CATEGORY MODE	Press to select the category mode for XM Radio (page 60).
FM MODE	Press to select the FM monaural or stereo reception.

Name	Function
13 **TV**	Press TV and the button with orange printing at the same time to enable TV operation.
14 **MENU/HOME**	Press to display the menu of the VCR, DVD player, satellite tuner or Blu-ray disc player on the TV screen. Press MENU/HOME and TV (13) at the same time to display the TV's menu. Then, use ↑, ↓, ←, → and ⊕ (16) to perform menu operations.
15 **RETURN/ EXIT ↶**	Press to – return to the previous menu. – exit the menu while the menu or on-screen guide of the VCR, DVD player, satellite tuner or Blu-ray disc player is displayed on the TV screen. Press RETURN/EXIT and TV (13) at the same time to return to the previous menu or exit the TV's menu while the menu is displayed on the TV screen.
16 ⊕ **↑/↓/←/→**	After pressing DVD/BD MENU (6), AMP MENU (8), or MENU/HOME (14), press ↑, ↓, ← or → to select the settings. Then, press ⊕ to enter the selection if you have pressed DVD/BD MENU or MENU/HOME previously. Press ⊕ also to enter the selection of the receiver, VCR, satellite tuner, CD player, DVD player or Blu-ray disc player.
17 **DISPLAY**	Press to select information displayed on the TV screen of the VCR, satellite tuner, CD player, DVD player or Blu-ray disc player. Press DISPLAY and TV (13) at the same time to display TV's information on the TV screen.

Name	Function
18 **TOOLS/ OPTIONS**	Press to display and select the options of the DVD player or Blu-ray disc player. Press TOOLS/OPTIONS and TV (13) at the same time to display the options applicable to the Sony TV.
19 ●	Press to input the decimal point for channel numbers of the Digital CATV terminal. Press ● and TV (13) at the same time to input the decimal point for the channel numbers of the TV.
>10	Press to select track numbers over 10 of the CD player.
CLEAR	Press to clear a mistake when you press the incorrect numeric button.
20 **Numeric buttons (number 5[a])**	Press to – preset/tune to preset stations. – select track numbers of the CD player, DVD player or Blu-ray disc player. Press 0/10 to select track number 10. – select channel numbers of the VCR or satellite tuner. Press the numeric buttons and TV (13) at the same time to select the TV channels.
21 **TV INPUT**	Press TV INPUT and TV (13) at the same time to select the input signal (TV input or video input).
SLEEP	Press to activate the Sleep Timer function and the duration which the receiver turns off automatically.

[a] The number 5, MASTER VOL +, TV VOL +, and ▷ buttons have tactile dots. Use the tactile dots as references when operating the receiver.

[b] This button is also available for DIGITAL MEDIA PORT adapter operation. For details on the function of the button, refer to the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

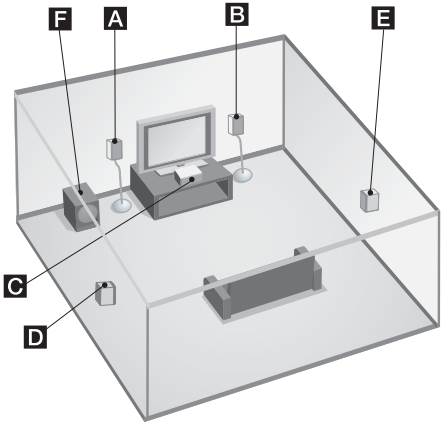
Notes

- Some functions explained in this section may not work depending on the model.
- The above explanation is intended to serve as an example only. Therefore, depending on the component, the above operation may not be possible or may operate differently than described.

1: Installing the speakers

This receiver allows you to use a 5.1 channel system (5 speakers and one sub woofer). To fully enjoy theater-like multi channel surround sound requires five speakers (two front speakers, a center speaker, and two surround speakers) and a sub woofer (5.1 channel).

Example of a 5.1 channel speaker system configuration



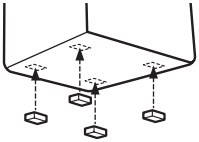
A Front speaker (left)
B Front speaker (right)
C Center speaker
D Surround speaker (left)
E Surround speaker (right)
F Sub woofer

Tip

Since the sub woofer does not emit highly directional signals, you can place it wherever you want.

Installing the speakers on a flat surface

Before you install the speakers and sub woofer, be sure to attach the supplied foot pads to prevent vibration or movement as shown in the illustration below.



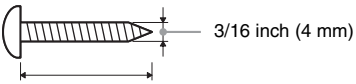
Installing the speakers on the speaker stand

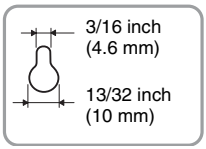
For greater flexibility in positioning the speakers, use the optional WS-FV11 speaker stand (available only in certain countries). For details, refer to the operating instructions supplied with the speaker stand.

Installing the speakers on the wall

You can install your surround speakers on the wall.

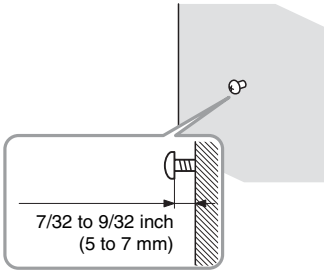
1 Prepare screws (not supplied) that are suitable for the hook on the back of each speaker as shown in the illustrations below.





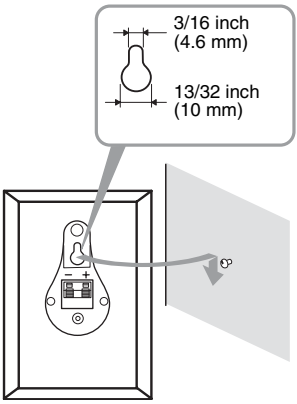
Hook on the back of the speaker

2 Fasten the screws to the wall. The screws should protrude 7/32 to 9/32 inch (5 to 7 mm).



3 Hang the speakers on the screws.

Hook on the back of the speaker

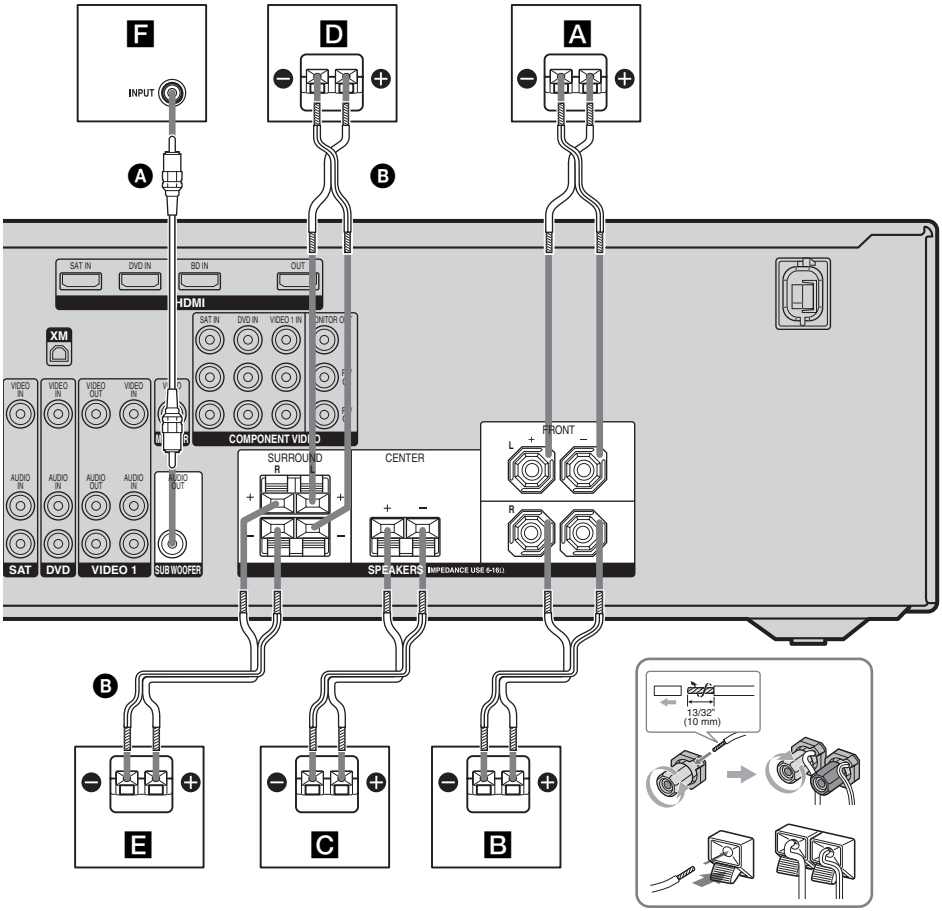


Notes

- Use screws that are suitable for the wall material and strength. As a plaster board wall is especially fragile, attach the screws securely to a beam and fasten them to the wall. Install the speakers on a vertical and flat wall where reinforcement is applied.
- Contact a screw shop or installer regarding the wall material or screws to be used.
- Sony is not responsible for accident or damage caused by improper installation, insufficient wall strength or improper screw installation, natural calamity, etc.

2: Connecting the speakers

Before connecting the cords, be sure to disconnect the AC power cord.



A Monaural audio cord (supplied)
B Speaker cords (supplied)*

A Front speaker (left)
B Front speaker (right)
C Center speaker
D Surround speaker (left)
E Surround speaker (right)
F Sub woofer

* Use the long speaker cords to connect the surround speakers and the short speaker cords to connect the front and center speakers.

To connect the speakers correctly

Check the speaker type by referring to the speaker label* on the rear panel of the speakers.

Character on speaker label	Speaker type
L	Front left
R	Front right
SL	Surround left
SR	Surround right

* The center speaker and sub woofer do not have any character on the speaker label. For details on the speaker type, see page 3.

Note

You can turn on or off the speaker system with the SPEAKERS (ON/OFF) button (page 5).

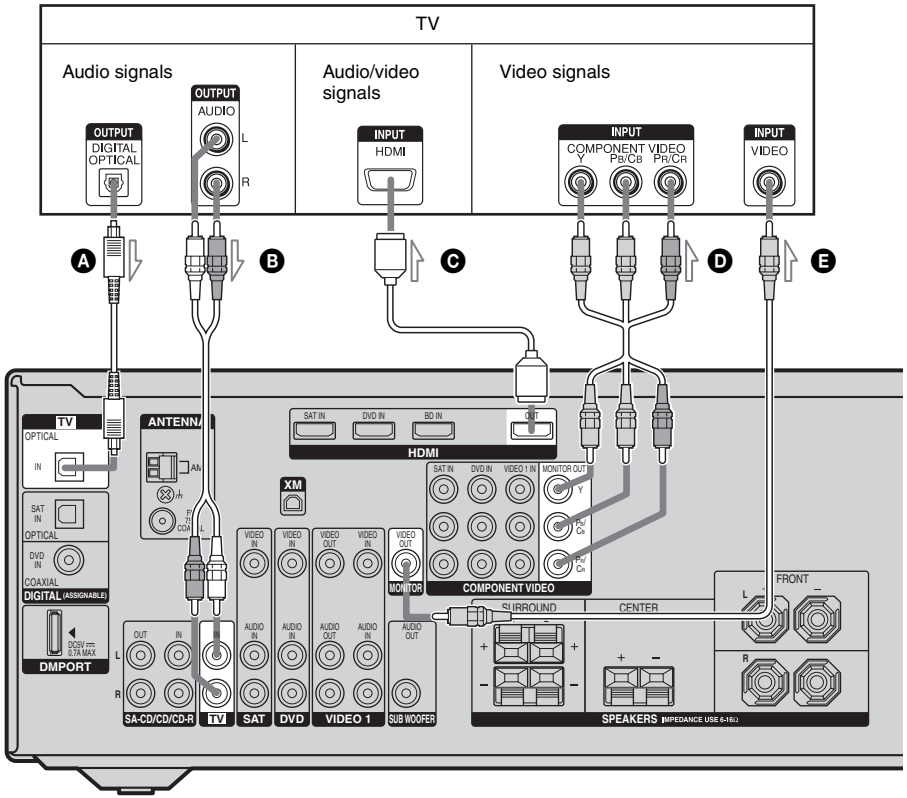
Tip

Use the supplied speakers to optimize the system's performance.

3: Connecting the TV

You can watch the selected input image when you connect the HDMI OUT or MONITOR OUT jack to a TV.

It is not necessary to connect all the cords. Connect audio and video cords according to the jacks of your components. Before connecting the cords, be sure to disconnect the AC power cord.



A Optical digital cord (not supplied)
B Audio cord (not supplied)
C HDMI cable (not supplied)
We recommend that you use a Sony HDMI cable.
D Component video cord (not supplied)
E Video cord (not supplied)

Notes

- Be sure to turn on the receiver when the video and audio signals of a playback component are being output to a TV via the receiver. Unless the power is turned on, neither video nor audio signals will be transmitted.
- When connecting optical digital cords, insert the plugs straight in until they click into place.
- Do not bend or tie optical digital cords.

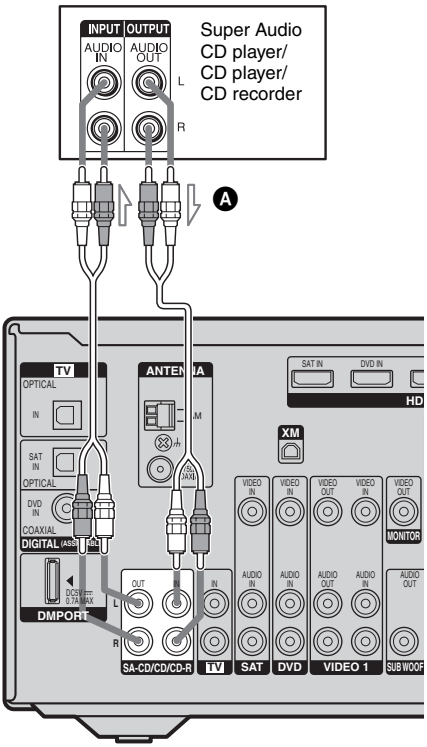
Tips

- To output the sound of the TV from the speakers connected to the receiver, be sure to
  - connect the audio output jacks of the TV to the TV IN jacks of the receiver.
  - turn off the TV's volume or activate the TV's muting function.
- All the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.

4a: Connecting the audio components

Connecting a Super Audio CD/CD player/CD recorder

The following illustration shows how to connect a Super Audio CD player, CD player or CD recorder. Before connecting the cords, be sure to disconnect the AC power cord. After connecting your audio component, proceed to "4b: Connecting the video components" (page 20).



A Audio cord (not supplied)

4b: Connecting the video components

How to hook up your components

This section describes how to hook up your components to this receiver. Before you begin, refer to "Component to be connected" below for the pages which describe how to connect each component.
Before connecting the cords, be sure to disconnect the AC power cord.
After hooking up all your components, proceed to "5: Connecting the antennas" (page 27).

Component to be connected

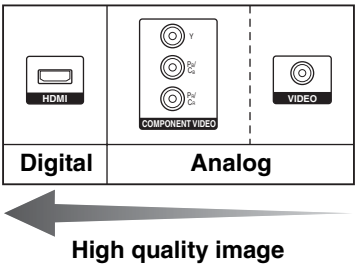
Component	Page
TV	18
With HDMI jack	21
DVD player	23
Satellite tuner/Set-top box	24
DVD recorder, VCR	25
Camcorder, video game, etc.	25

If you want to connect several digital components, but cannot find an unused input

See "Listening to digital sound from other inputs (DIGITAL ASSIGN)" (page 70).

Video input/output jack to be connected

The image quality depends on the connecting jack. Refer to the illustration that follows. Select the connection according to the jacks on your components.



Note

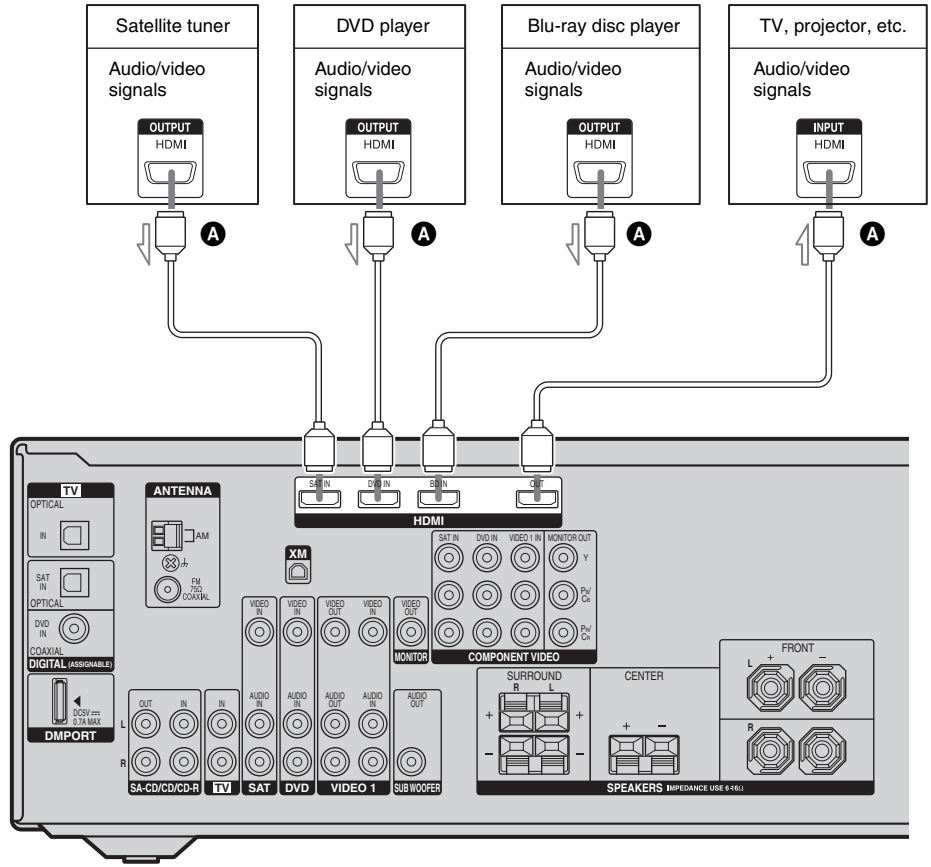
Be sure to turn on the receiver when the video and audio signals of a playback component are being output to a TV via the receiver. Unless the power is turned on, neither video nor audio signals will be transmitted.

Connecting components with HDMI jacks

HDMI is the abbreviated name for High-Definition Multimedia Interface. It is an interface which transmits video and audio signals in digital format.

HDMI features

- A digital audio signal transmitted by HDMI can be output from the speakers connected to this receiver. This signal supports Dolby Digital, DTS, and Linear PCM.
- This receiver supports xvYCC transmission.
- This receiver supports the Control for HDMI function. For details, see "Control for HDMI" (page 64).



A HDMI cable (not supplied)

continued

Notes on connecting cables

- We recommend that you use a Sony HDMI cable.
- We do not recommend using an HDMI-DVI conversion cable. When you connect an HDMI-DVI conversion cable to a DVI-D component, the sound and/or the image may not be output.

Notes on HDMI connections

- Audio signals input to the HDMI IN jack can only be output from the SPEAKERS jacks and HDMI OUT jack. The audio input signals cannot be output from any other audio jacks.
- Video signals input to the HDMI IN jack can only be output from the HDMI OUT jack. The video input signals cannot be output from the VIDEO OUT jacks or MONITOR OUT jacks.
- When you want to listen to the sound from the TV speaker, set "AUDIO FOR HDMI" to "TV+AMP" in the VIDEO menu (page 44). If you cannot play back multi channel software, set to "AMP". However, the sound will not output from the TV speaker.
- The multi/stereo area audio signals of a Super Audio CD are not output.
- Audio signals (sampling frequency, bit length, etc.) transmitted from an HDMI jack may be suppressed by the connected component. Check the setup of the connected component if the image is poor or the sound does not come out of a component connected via the HDMI cable.
- Sound may be interrupted when the sampling frequency, the number of channels or the audio format of the audio output signals from the playback component is switched.
- When the connected component is not compatible with copyright protection technology (HDCP), the image and/or the sound from the HDMI OUT jack may be distorted or may not be output.
  In this case, check the specification of the connected component.
- You can enjoy multi channel Linear PCM only with an HDMI connection.
- Set the resolution of the image of the playback component to 720p, 1080i or 1080p when you output 96 kHz multi channel sound over an HDMI connection.
- You may need to make certain settings on the image resolution of the player before you can enjoy multi channel Linear PCM. Refer to the operation instructions of the player.
- Refer to the operating instructions of each connected component for details.

Connecting a DVD player

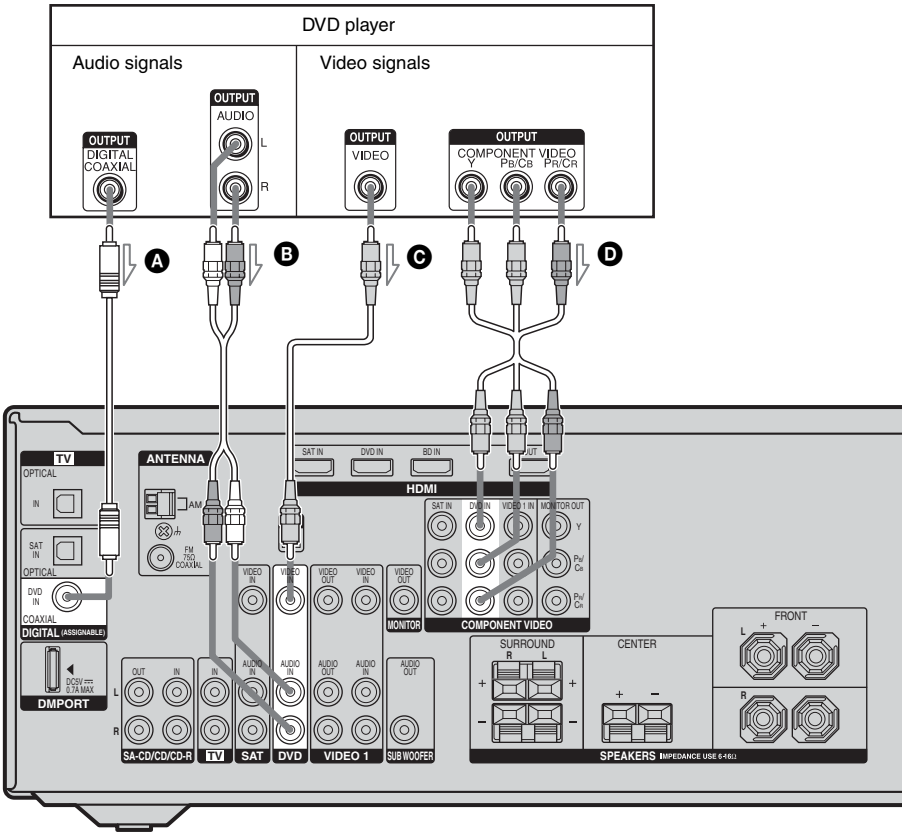
The following illustration shows how to connect a DVD player.
It is not necessary to connect all the cables. Connect audio and video cords according to the jacks of your components.

Note

To input multi channel digital audio from the DVD player, set the digital audio output setting on the DVD player. Refer to the operating instructions supplied with the DVD player.

Tip

All the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.



A Coaxial digital cord (not supplied)
B Audio cord (not supplied)
C Video cord (not supplied)
D Component video cord (not supplied)

Connecting a satellite tuner/ Set-top box

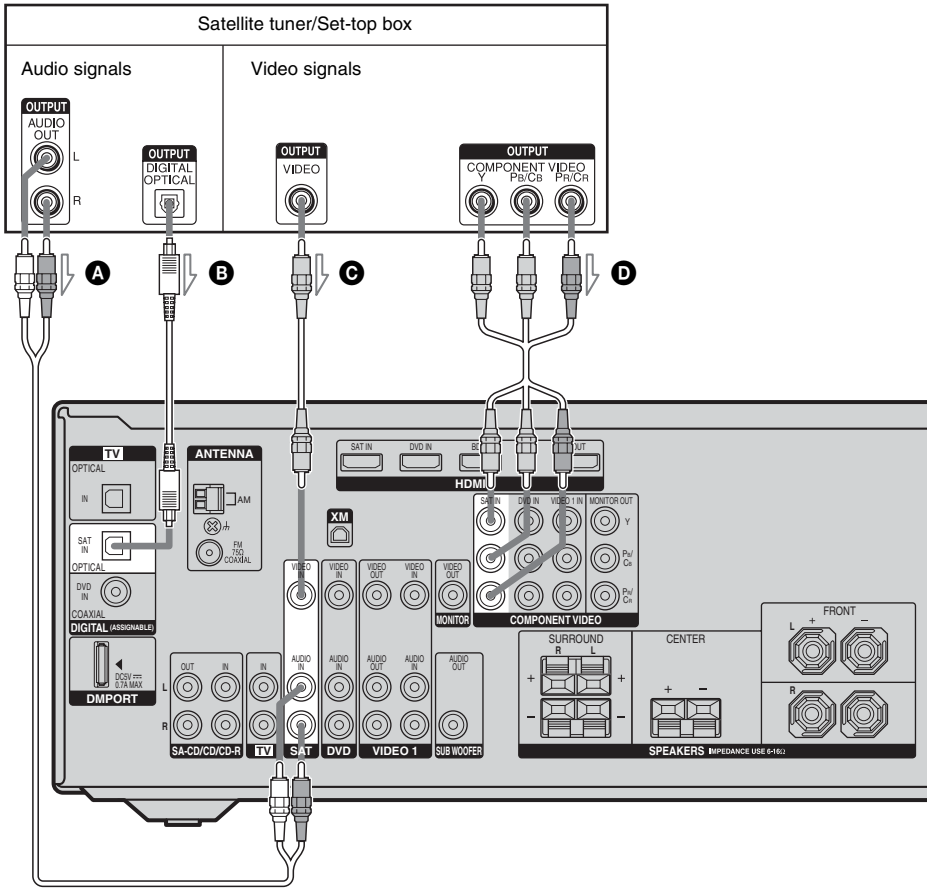
The following illustration shows how to connect a satellite tuner or set-top box. It is not necessary to connect all the cables. Connect audio and video cords according to the jacks of your components.

Notes

- When connecting optical digital cords, insert the plugs straight in until they click into place.
- Do not bend or tie optical digital cords.

Tip

All the digital audio jacks are compatible with 32 kHz, 44.1 kHz, 48 kHz, and 96 kHz sampling frequencies.

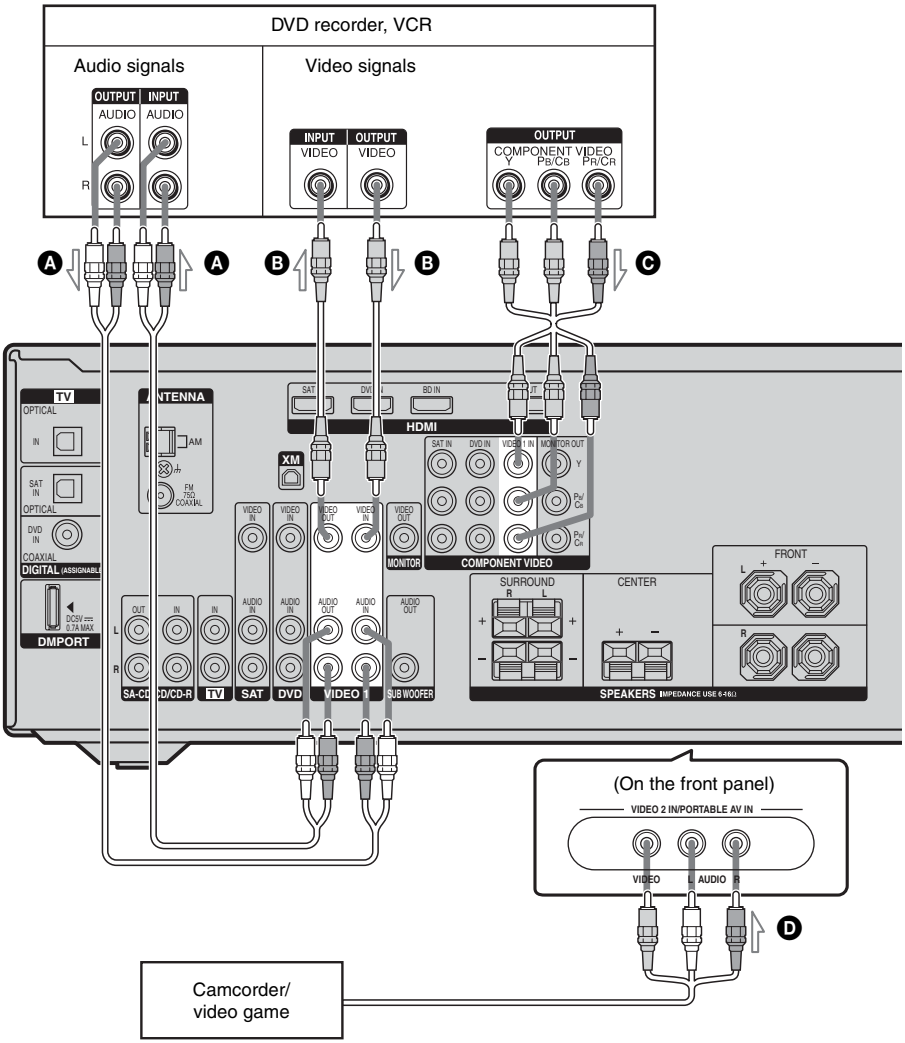


A Audio cord (not supplied)
B Optical digital cord (not supplied)
C Video cord (not supplied)
D Component video cord (not supplied)

Connecting components with analog video and audio jack

The following illustration shows how to connect a component which has analog jacks such as a DVD recorder, VCR, etc.

It is not necessary to connect all the cables. Connect audio and video cords according to the jacks of your components.



A Audio cord (not supplied)
B Video cord (not supplied)
C Component video cord (not supplied)
D Audio/video cord (not supplied)

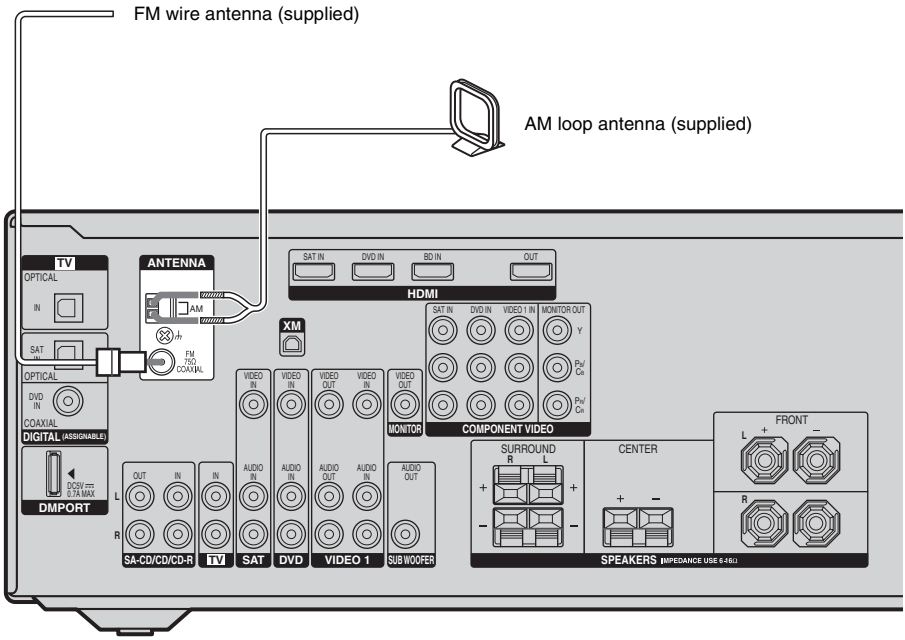
continued

Notes

- Be sure to change the factory setting of the VIDEO 1 input button on the remote so that you can use the button to control your DVD recorder. For details, see “Changing button assignments” (page 76).
- You can also rename the VIDEO 1 input so that it can be displayed on the receiver’s display. For details, see “Naming inputs” (page 73).

5: Connecting the antennas

Connect the supplied AM loop antenna and FM wire antenna.
Before connecting the antennas, be sure to disconnect the AC power cord.



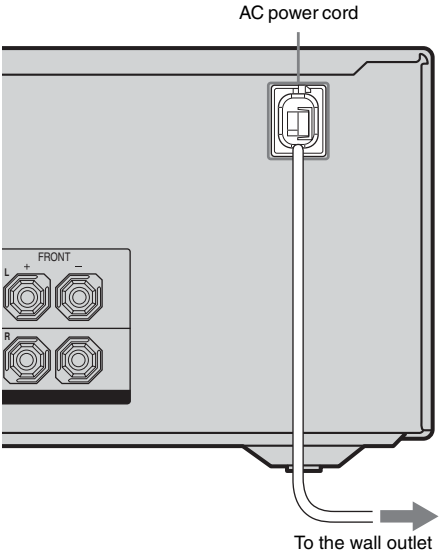
Notes

- To prevent noise pickup, keep the AM loop antenna away from the receiver and other components.
- Be sure to fully extend the FM wire antenna.
- After connecting the FM wire antenna, keep it as horizontal as possible.

6: Preparing the receiver and the remote

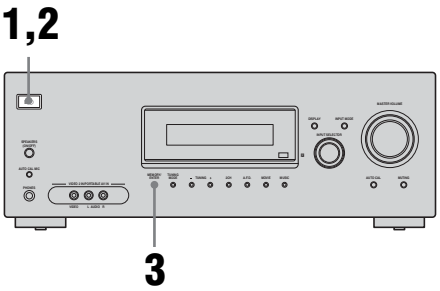
Connecting the AC power cord

Connect the AC power cord to a wall outlet.



Performing initial setup operations

Before using the receiver for the first time, initialize the receiver by performing the following procedure. This procedure can also be used to return settings you have made to their factory defaults.
Be sure to use the buttons on the receiver for this operation.



1 Press I/⏻ to turn off the receiver.

2 Hold down I/⏻ for 5 seconds.

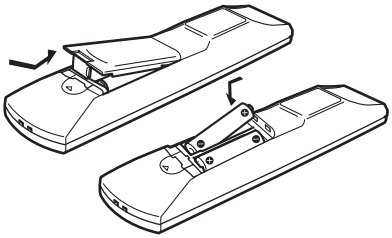
"PUSH" and "ENTER" appears on the display alternately.

3 Press MEMORY/ENTER.

After "CLEARING" appears on the display for a while, "CLEARED" appears.
All the settings you have changed or adjusted are reset to the initial settings.

Inserting batteries into the remote

Insert two R6 (size-AA) batteries in the RM-AAU021 Remote Commander. Observe the correct polarity when installing batteries.



Notes

- Do not leave the remote in an extremely hot or humid place.
- Do not use a new battery with old ones.
- Do not mix manganese batteries and other kinds of batteries.
- Do not expose the remote sensor to direct sunlight or lighting apparatuses. Doing so may cause a malfunction.
- If you do not intend to use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.
- When you replace the batteries, the remote buttons may be reset to their factory settings. If this happens, reassign the buttons again (page 76).

Tip

Under normal conditions, the batteries should last for about 3 months. When the remote no longer operates the receiver, replace all the batteries with new ones.

7: Calibrating the appropriate settings automatically (AUTO CALIBRATION)

The DCAC (Digital Cinema Auto Calibration) function allows you to perform automatic calibration such as:

- Checking the connection between each speaker and the receiver.
- Adjusting the speaker level.
- Measuring the distance of each speaker from your listening position.

The DCAC is designed to obtain proper sound balance in your room. However, you can adjust the speaker levels and balance manually according to your preference. For details, see “8: Adjusting the speaker levels and balance (TEST TONE)” (page 33).

Before you perform Auto Calibration

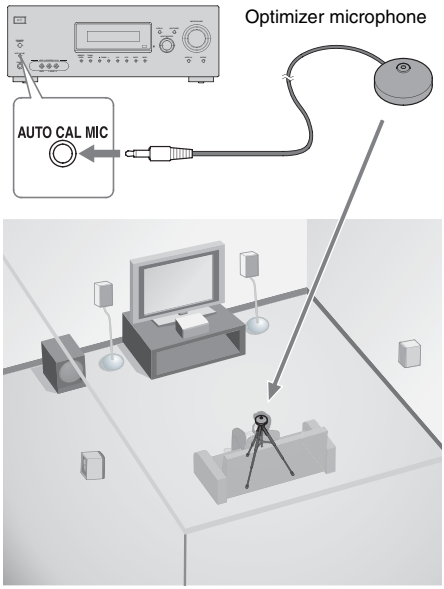
Before you perform Auto Calibration, install and connect the speakers (page 14, 16).

- The AUTO CAL MIC jack is used for the supplied optimizer microphone only. Do not connect other microphones to this jack. Doing so may damage the receiver and the microphone.
- During calibration, the sound that comes out of the speakers is very loud. The volume of the sound cannot be adjusted. Pay attention to the presence of children or to the effect on your neighborhood.
- Perform Auto Calibration in a quiet environment to avoid the effect of noise and to get a more accurate measurement.
- If there are any obstacles in the path between the optimizer microphone and the speakers, the calibration cannot be performed correctly. Remove any obstacles from the measurement area to avoid measurement error.

continued

Notes

- The Auto Calibration function does not work when headphones are connected.
- If the muting function has been activated before you perform Auto Calibration, the muting function will be set to off automatically.

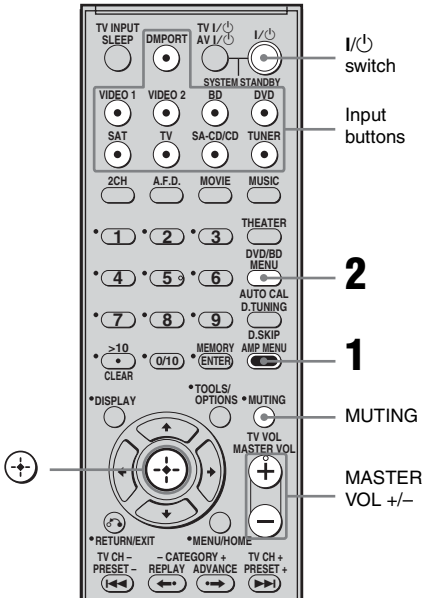


1 Connect the supplied optimizer microphone to the AUTO CAL MIC jack.

2 Set up the optimizer microphone.

Place the optimizer microphone at your listening position. Use a stool or tripod so that the optimizer microphone remains at the same height as your ears.

Performing Auto Calibration



1 Press AMP MENU.

2 Press AUTO CAL.

Measurement starts in 5 seconds and the display changes as follows:
A.CAL [5] → A.CAL [4] → A.CAL [3] → A.CAL [2] → A.CAL [1]
While the time is counting down, stand away from the measurement area to avoid measurement error.

3 Measurement starts.

The measurement process will take a few minutes to complete.

The table below shows the display when measurement starts.

Measurement for	Display
Environment noise level	NOISE.CHK
Speaker connection	MEASURE and SP DET. appears alternately*
Speaker level	MEASURE and GAIN appears alternately*
Speaker distance	MEASURE and DISTANCE appears alternately*

* The corresponding speaker indicator lights up in the display during measurement.

4 Measurement ends.

"COMPLETE" appears on the display and the settings are registered.

When you have finished

Disconnect the optimizer microphone from the AUTO CAL MIC jack.

Notes

- Auto Calibration cannot detect the sub woofer. Therefore, all sub woofer settings will be maintained.
- If you have repositioned your speakers, we recommend that you perform Auto Calibration again to enjoy the surround sound.

Tips

- When Auto Calibration starts:
  - Stand some distance from the speakers and the listening position to avoid measurement failure. This is because test signals are output from the speakers during measurement.
  - Avoid making noise to get a more accurate measurement.
- During the measurement process, the Auto Calibration function will be canceled when you do the following:
  - Press I/⏻ or MUTING.
  - Press the input buttons or turn INPUT SELECTOR on the receiver.
  - Change the volume level.
  - Connect the headphones.
  - Press AUTO CAL again.

Error and warning codes

When error codes appear

When an error is detected during Auto Calibration, an error code will appear on the display cyclically after each measurement process as follows:
Error code → blank display → (error code → blank display)[a] → PUSH → blank display → ENTER

[a] Appears when there are more than one error code.

To rectify the error

1 Record down the error code.
2 Press ⊕.
3 Press I/⏻ to turn off the receiver.
4 Rectify the error.
For details, see "Error codes and remedies" below.
5 Turn on the receiver and perform Auto Calibration again (page 30).

Error codes and remedies

Error code	Cause and remedy
ERROR 10	The environment is too noisy. Make sure the environment is quiet during Auto Calibration.
ERROR 11	The speakers are placed too near the optimizer microphone. Place your speakers further away from the optimizer microphone.
ERROR 12	None of the speakers are detected. Make sure that the optimizer microphone is connected properly and perform Auto Calibration again.
ERROR 20	Front speakers are not detected or only one front speaker is detected. Check the front speakers connection.
ERROR 21	Only one surround speaker is detected. Check the surround speakers connection.

continued

When warning codes appear

During Auto Calibration, the warning code provides information on the measurement result. The warning code will appear on the display cyclically as follows:

Warning code → blank display → (warning code → blank display)[b] → PUSH → blank display → ENTER

[b] Appears when there are more than one warning code.

You can choose to ignore the warning code as the Auto Calibration function will automatically adjust the settings. You can also change the settings manually.

To change the settings manually

1 Record down the warning code.
2 Press ⊕.
3 Press I/⏻ to turn off the receiver.
4 Follow the solution provided in the "Warning codes and solutions" below.
5 Turn on the receiver and perform Auto Calibration again (page 30).

Warning codes and solutions

Warning code	Explanation and solution
WARN. 40	The environment is noisy. Make sure the environment is quiet during Auto Calibration.
WARN. 50	The center speaker is not connected. Be sure to connect the center speaker.
WARN. 51	The surround speakers are not connected. Be sure to connect the surround speakers.
WARN. 60	The front speaker balance is out of range. Reposition your front speakers.[c]
WARN. 62	The center speaker level is out of range. Reposition your center speaker.[d]
WARN. 63	The surround left speaker level is out of range. Reposition your surround left speaker.[d]
WARN. 64	The surround right speaker level is out of range. Reposition your surround right speaker.[d]
WARN. 70	The front speaker distance is out of range. Reposition your front speakers.[c]
WARN. 72	The center speaker distance is out of range. Reposition your center speaker.[d]
WARN. 73	The surround left speaker distance is out of range. Reposition your surround left speaker.[d]
WARN. 74	The surround right speaker distance is out of range. Reposition your surround right speaker.[d]

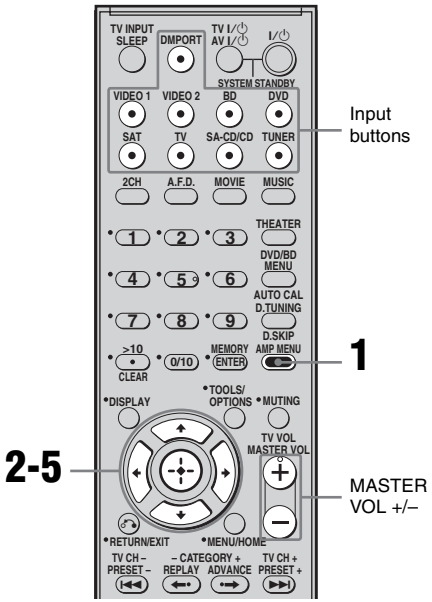
[c] For details, refer "Front speaker distance" (page 45).
[d] For details, refer "Tip" on page 46.

8: Adjusting the speaker levels and balance (TEST TONE)

You can adjust the speaker levels and balance while listening to the test tone from your listening position.

Tip

The receiver employs a test tone with a frequency centered at 800 Hz.



1 Press AMP MENU.

"1-LEVEL" appears on the display.

2 Press ⊕ or → to enter the menu.

3 Press ↑/↓ repeatedly to select "T. TONE".

4 Press ⊕ or → to enter the parameter.

5 Press ↑/↓ repeatedly to select "T. TONE Y".

The test tone is output from each speaker in sequence as follows:
Front left ⟶ Center ⟶ Front right ⟶ Surround right ⟶ Surround left ⟶ Sub woofer

6 Adjust the speaker levels and balance using the LEVEL menu so that the level of the test tone sounds the same from each speaker.

For details, see "Adjusting the level (LEVEL menu)" (page 41).

Tips

- To adjust the level of all speakers at the same time, press MASTER VOL +/–. You can also use MASTER VOLUME on the receiver.
- The adjusted value are shown on the display during adjustment.

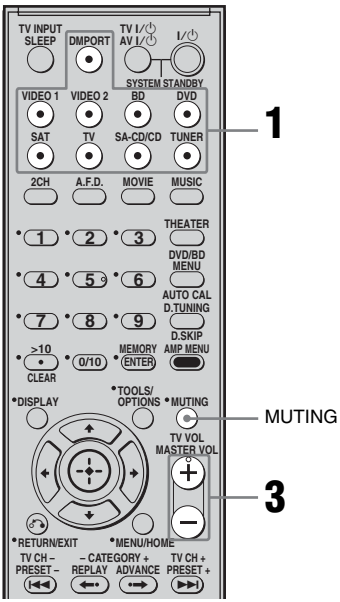
7 Repeat steps 1 to 5 to select "T. TONE N".

You can also press any input buttons. The test tone turns off.

When a test tone is not output from the speakers

- The speaker cords may not be connected securely.
- The speaker cords may have the short-circuit problem.

Selecting a component



1 Press one of the input buttons to select the component you want.

You can also use INPUT SELECTOR on the receiver.
The selected input appears on the display.

Selected input [Display]	Components that can be played back
DMPORT [DMPORT]	DIGITAL MEDIA PORT adapter connected to the DMPORT jack
VIDEO 1 [VIDEO 1]	DVD recorder, VCR, etc., connected to the VIDEO 1 jack
VIDEO 2 [VIDEO 2/ PORTABLE AV]*	Camcorder, video game, etc., connected to the VIDEO 2 IN/PORTABLE AV IN jack
BD [BD]	Blu-ray disc player, etc., connected to the BD jack
DVD [DVD]	DVD player, etc., connected to the DVD jack
SAT [SAT]	Satellite tuner, set-top box, etc., connected to the SAT jack
TV [TV]	TV, etc., connected to the TV jack
SA-CD/CD [SA-CD/CD/ CD-R]*	Super Audio CD player, CD player, etc., connected to the SA-CD/CD/CD-R jack
TUNER [FM or AM band]	Built-in radio tuner
TUNER [XM RADIO]	For details, see page 56.

* VIDEO 2/PORTABLE AV" and "SA-CD/CD/CD-R" scroll across the display, then "VIDEO 2" and "SA-CD/CD" appear respectively.

2 Turn on the component and start playback.

3 Press MASTER VOL +/– to adjust the volume.

You can also use MASTER VOLUME on the receiver.

To activate the muting function

Press MUTING.

The muting function will be canceled when you do the following.

- Press MUTING again.
- Increase the volume.
- Turn off the receiver.

To avoid damaging your speakers

Before you turn off the receiver, be sure to turn down the volume level.

To listen to the sub woofer

Be sure to use the controls on the rear panel of the sub woofer for this operation.

1 Press POWER.
The POWER indicator on the front panel of the sub woofer lights up.

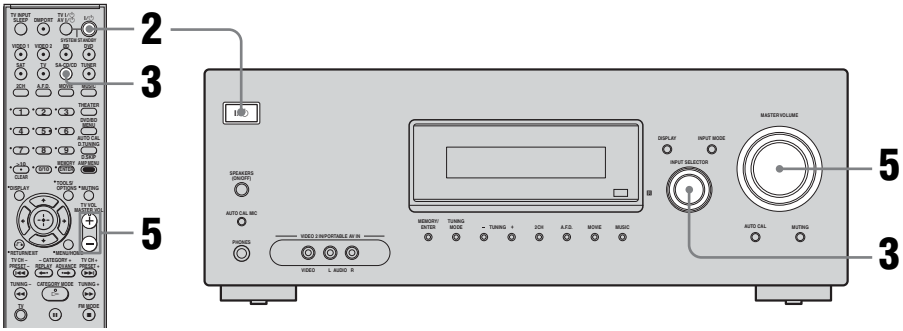
2 Turn LEVEL to adjust the volume.
Set the volume level to suit your preference according to the selected input as slight adjustments may enhance the sound.

Note

Do not set the volume of the sub woofer to maximum as extraneous noise may be heard.

Listening/Watching a component

Listening to a Super Audio CD/CD



Notes

- The operation is described for a Sony Super Audio CD player.
- Refer to the operating instructions supplied with the Super Audio CD player or CD player.

Tip

You can select the sound field to suit the music. Refer to page 49 for details.
Recommended sound fields:
Classical: HALL
Jazz: JAZZ
Live concert: CONCERT

1 Turn on the Super Audio CD player/CD player, then place the disc on the tray.

2 Turn on the receiver.

3 Press SA-CD/CD.

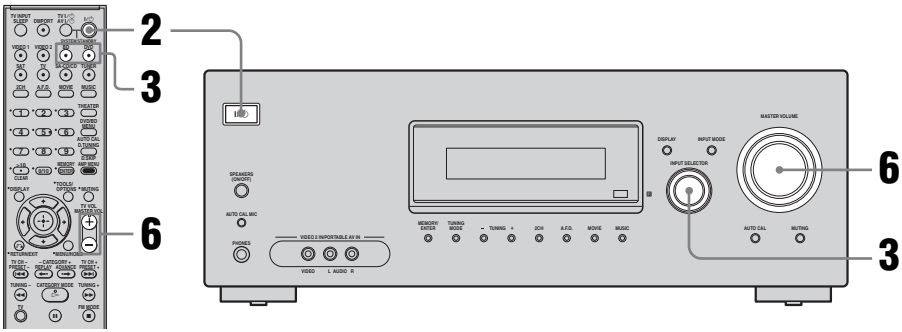
You can also use INPUT SELECTOR on the receiver to select “SA-CD/CD/CD-R”.

4 Play back the disc.

5 Adjust to a suitable volume.

6 After you have finished listening to the Super Audio CD/CD, eject the disc and turn off the receiver and Super Audio CD player/ CD player.

Watching a DVD/Blu-ray disc



Notes

- Refer to the operating instructions supplied with the TV and DVD player/Blu-ray disc player.
- Check the following if you cannot listen to multi channel sound.
  - Be sure this receiver is connected to the DVD player/Blu-ray disc player via a digital connection.
  - Be sure the digital audio output of the DVD player/Blu-ray disc player is set up properly.

Tips

- Select the sound format of the disc to be played, if necessary.
- You can select the sound field to suit the movie/music. Refer to page 49 for details.
  Recommended sound fields:
  Movie: C.ST.EX
  Music: CONCERT

1 **Turn on the TV and DVD player/Blu-ray disc player.**

2 **Turn on the receiver.**

3 **Press DVD to watch a DVD or press BD to watch a Blu-ray disc.**

You can also use INPUT SELECTOR on the receiver to select “DVD” or “BD”.

4 **Switch the input of the TV so that an image of the DVD/Blu-ray disc is displayed.**

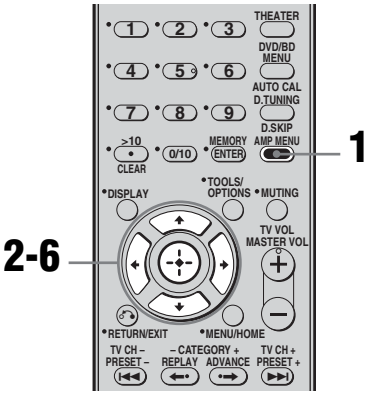
5 **Play back the disc.**

6 **Adjust to a suitable volume.**

7 **After you have finished watching the DVD/Blu-ray disc, eject the disc and turn off the receiver, TV and DVD player/Blu-ray disc player.**

Navigating through menus

By using the amplifier menus, you can make various adjustments to customize the receiver.



1 Press AMP MENU.

"1-LEVEL" appears on the display.

2 Press ↑/↓ repeatedly to select the menu you want.

3 Press ⊕ or → to enter the menu.

4 Press ↑/↓ repeatedly to select the parameter you want to adjust.

5 Press ⊕ or → to enter the parameter.

6 Press ↑/↓ repeatedly to select the setting you want.

The setting is entered automatically.

To return to the previous display

Press ←.

To exit the menu

Press AMP MENU.

Note

Some parameters and settings may appear dimmed on the display. This means that they are either unavailable or fixed and unchangeable.

Overview of the menus

The following options are available in each menu. For details on navigating through menus, see page 38.

Menu [Display]	Parameters [Display]	Settings	Initial setting
LEVEL [1-LEVEL] (page 41)	Test tone[a] [T. TONE]	T. TONE N, T. TONE Y	T. TONE N
	Front speaker balance[a] [FRT BAL]	BAL. L +1 to BAL. L +8, BALANCE, BAL. R +1 to BAL. R +8	BALANCE
	Center speaker level [CNT LVL]	CNT –10 dB to CNT +10 dB (1 dB step)	CNT 0 dB
	Surround left speaker level [SL LVL]	SUR L –10 dB to SUR L +10 dB (1 dB step)	SUR L 0 dB
	Surround right speaker level [SR LVL]	SUR R –10 dB to SUR R +10 dB (1 dB step)	SUR R 0 dB
	Sub woofer level [SW LVL]	SW –10 dB to SW +10 dB (1 dB step)	SW 0 dB
	Dynamic range compressor[a] [D. RANGE]	COMP. OFF, COMP. STD, COMP. MAX	COMP. OFF
TONE [2-TONE] (page 42)	Front speaker bass level [BASS LVL]	BASS –6 dB to BASS +6 dB (1 dB step)	BASS 0 dB
	Front speaker treble level [TRE LVL]	TRE –6 dB to TRE +6 dB (1 dB step)	TRE –4 dB
SUR [3-SUR] (page 42)	Sound field selection[a] [S.F. SELCT]	For details, see “Enjoying Surround Sound” (page 48).	A.F.D. AUTO
	Effect level[a] [EFFECT]	EFCT. MIN, EFCT. STD, EFCT. MAX	EFCT. STD
TUNER [4-TUNER] (page 43)	FM station receiving mode[a] [FM MODE]	FM AUTO, FM MONO	FM AUTO
	Naming preset stations[a] [NAME IN]	For details, see “Naming preset stations” (page 55).	
	XM Antenna Aiming[b] [XM ANT]	For details, see “Aiming the XM Antenna” (page 57).	

continued

Menu [Display]	Parameters [Display]	Settings	Initial setting
AUDIO [5-AUDIO] (page 43)	Digital audio input decoding priority[a] [DEC. PRI.]	DEC. PCM, DEC. AUTO	DEC. PCM for SA-CD/CD; DEC. AUTO for VIDEO 1, 2, BD, DVD, SAT, TV
	Digital broadcast language selection[a] [DUAL]	DUAL M/S, DUAL M, DUAL S, DUAL M+S	DUAL M
	Synchronizes audio with video output[a] [A.V. SYNC.]	A.V.SYNC. N, A.V.SYNC. Y	A.V.SYNC. N
	Digital audio input assignment[a] [D. ASSIGN]	For details, see “Listening to digital sound from other inputs (DIGITAL ASSIGN)” (page 70).	
	Naming inputs[a] [NAME IN]	For details, see “Naming inputs” (page 73).	
VIDEO [6-VIDEO] (page 44)	Audio for HDMI[a][c] [AUDIO FOR HDMI]	AMP, TV+AMP	AMP
	Control for HDMI[a][c] [CONTROL FOR HDMI]	CTRL OFF, CTRL ON	CTRL OFF
	Naming inputs[a] [NAME IN]	For details, see “Naming inputs” (page 73).	
SYSTEM [7-SYSTEM] (page 45)	Front speaker distance[a] [FRT DIST.]	DIST. 3 ft. to DIST. 23 ft. (1 ft. step)	DIST. 10 ft.
	Center speaker distance[a] [CNT DIST.]	DIST. 3 ft. to DIST. 23 ft. (1 ft. step)	DIST. 10 ft.
	Surround left speaker distance[a] [SL DIST.]	DIST. 3 ft. to DIST. 23 ft. (1 ft. step)	DIST. 10 ft.
	Surround right speaker distance[a] [SR DIST.]	DIST. 3 ft. to DIST. 23 ft. (1 ft. step)	DIST. 10 ft.
	Surround speaker position[a] [SUR POS.]	BEHD/HI, BEHD/LO, SIDE/HI, SIDE/LO	SIDE/LO
	Brightness of the display[a] [DIMMER]	0% dim, 40% dim, 70% dim	0% dim
A. CAL [8-A. CAL] (page 47)	Auto Calibration[a] [AUTO CAL]	A.CAL NO, A.CAL YES	A.CAL NO

[a] For details, refer to the page in the parentheses.

[b] This parameter is only available if the XM Mini-Tuner and Home Dock is connected to the XM jack on the receiver.

[c] “AUDIO FOR HDMI” and “CONTROL FOR HDMI” scroll across the display, then “AUDIO” and “CONTROL” appear respectively.

Adjusting the level
(LEVEL menu)

You can use the LEVEL menu to adjust the balance and level of each speaker. These settings are applied to all sound fields. Select "1-LEVEL" in the amplifier menus. For details on adjusting the parameters, see "Navigating through menus" (page 38) and "Overview of the menus" (page 39).

LEVEL menu parameters

■ T. TONE (Test tone)

Lets you adjust the speaker levels and balance while listening to the test tone from your listening position. For details, see "8: Adjusting the speaker levels and balance (TEST TONE)" (page 33).

■ FRT BAL (Front speaker balance)

Lets you adjust the balance between front left and right speakers.

■ CNT LVL (Center speaker level)

■ SL LVL (Surround left speaker level)

■ SR LVL (Surround right speaker level)

■ SW LVL (Sub woofer level)

■ D. RANGE (Dynamic range compressor)

Lets you compress the dynamic range of the sound track. This may be useful when you want to watch movies at low volumes late at night. Dynamic range compression is possible with Dolby Digital sources only.

- COMP. OFF
  The dynamic range is not compressed.
- COMP. STD
  The dynamic range is compressed as intended by the recording engineer.
- COMP. MAX
  The dynamic range is compressed dramatically.

Tip

Dynamic range compressor lets you compress the dynamic range of the soundtrack based on the dynamic range information included in the Dolby Digital signal.
"COMP. STD" is the standard setting, but it only enacts light compression. Therefore, we recommend using the "COMP. MAX" setting. This greatly compresses the dynamic range and lets you view movies late at night at low volumes. Unlike analog limiters, the levels are predetermined and provide a very natural compression.

Adjusting the tone
(TONE menu)

You can use the TONE menu to adjust the tonal quality (bass/treble level) of the front speakers.
Select “2-TONE” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 38) and “Overview of the menus” (page 39).

TONE menu parameters

■ BASS LVL (Front speaker bass level)

■ TRE LVL (Front speaker treble level)

Settings for the surround sound
(SUR menu)

You can use the SUR menu to select the sound field you want for your listening pleasure.
Select “3-SUR” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 38) and “Overview of the menus” (page 39).

SUR menu parameters

■ S.F. SELCT (Sound field selection)

Lets you select the sound field you want. For details, see “Enjoying Surround Sound” (page 48).

Note

The receiver lets you apply the last selected sound field to an input whenever it is selected (Sound Field Link). For example, if you select “HALL” for the DVD input, then change to a different input and then return to DVD, “HALL” will automatically be applied again.

■ EFFECT (Effect level)

Lets you adjust the “presence” of the surround effect for sound fields selected with the MOVIE or MUSIC buttons and for “HP THEA” sound field.

- EFCT. MIN
  The surround effect is minimum.
- EFCT. STD
  The surround effect is standard.
- EFCT. MAX
  The surround effect is maximum.

Settings for the tuner (TUNER menu)

You can use the TUNER menu to set the FM station receiving mode and to name preset stations.
Select "4-TUNER" in the amplifier menus. For details on adjusting the parameters, see "Navigating through menus" (page 38) and "Overview of the menus" (page 39).

TUNER menu parameters

■ FM MODE (FM station receiving mode)

- FM AUTO
  This receiver will decode the signal as stereo signal when the radio station is broadcast in stereo.
- FM MONO
  This receiver will decode the signal as mono signal regardless of the broadcast signal.

■ NAME IN (Naming preset stations)

Lets you set the name of preset stations. For details, see "Naming preset stations" (page 55).

■ XM ANT (XM Antenna Aiming)

This parameter helps you to aim the XM antenna for optimal signal reception. For details, see "Aiming the XM Antenna" (page 57).

Settings for the audio (AUDIO menu)

You can use the AUDIO menu to make settings for the audio to suit your preference.
Select "5-AUDIO" in the amplifier menus. For details on adjusting the parameters, see "Navigating through menus" (page 38) and "Overview of the menus" (page 39).

AUDIO menu parameters

■ DEC. PRI. (Digital audio input decoding priority)

Lets you specify the input mode for the digital signal input to the DIGITAL IN and HDMI IN jacks.

- DEC. PCM
  When signals from the DIGITAL IN jack are selected, PCM signals are given priority (to prevent interruption when playback starts). However, when other signals are input, there may be no sound, depending on the format. In this case, set this item to "DEC. AUTO". When signals from the HDMI IN jack are selected, only PCM signals are output from the connected player. When signals in any other format are received, set this item to "DEC. AUTO".
- DEC. AUTO
  Automatically switches the input mode between DTS, Dolby Digital, or PCM.

Note

When set to "DEC. AUTO" and the sound from the digital audio jacks (for a CD, etc.) is interrupted when playback starts, set to "DEC. PCM".

continued

■ DUAL (Digital broadcast language selection)

Lets you select the language you want to listen to during digital broadcast. This feature only functions for Dolby Digital sources.

- DUAL M/S (Main/Sub)
  Sound of the main language will be output through the front left speaker and sound of the sub language will be output through the front right speaker simultaneously.
- DUAL M (Main)
  Sound of the main language will be output.
- DUAL S (Sub)
  Sound of the sub language will be output.
- DUAL M+S (Main + Sub)
  Mixed sound of both the main and sub languages will be output.

■ A.V. SYNC. (Synchronizes audio with video output)

- A.V.SYNC. N (No) (Delay time: 0 ms)
  The audio output is not delayed.
- A.V.SYNC. Y (Yes) (Delay time: 60 ms)
  The audio output is delayed so that the time gap between the audio output and visual display is minimized.

Notes

- This parameter is useful when you use a large LCD or plasma monitor or a projector.
- This parameter is valid only when you use a sound field selected with the 2CH or A.F.D. buttons.
- This parameter is not valid when
  – signals with a sampling frequency of more than 48 kHz are input.
  – multi channel Linear PCM signals are received via an HDMI jack.

■ D. ASSIGN (Digital audio input assignment)

Lets you assign the digital audio input to other input source. For details, see “Listening to digital sound from other inputs (DIGITAL ASSIGN)” (page 70).

■ NAME IN (Naming inputs)

Lets you set the name of inputs. For details, see “Naming inputs” (page 73).

Settings for the video

(VIDEO menu)

You can use the VIDEO menu to make various adjustments for HDMI and to name inputs. Select “6-VIDEO” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 38) and “Overview of the menus” (page 39).

VIDEO menu parameters

■ AUDIO FOR HDMI (Audio for HDMI)

Lets you set the audio output for HDMI from the playback component connected to the receiver via an HDMI connection.

- AMP
  The HDMI audio signals from the playback component is only output to speakers connected to the receiver. Multi-channel sound can be played back as it is.

  #### Note

  Audio signals are not output from the TV’s speakers when “AUDIO FOR HDMI” is set to “AMP”.

- TV+AMP
  The sound is output from TV’s speaker and the speakers connected to the receiver.

  #### Notes

  - The sound quality of the playback component depends on the TV’s sound quality, such as the number of channels, and the sampling frequency, etc. When the TV has stereo speakers, the sound output from the receiver is also stereo as that of the TV, even if you play back multi-channel source.
  - When you connect the receiver to a video component (projector, etc.), sound may not be output from the receiver. In this case, select “AMP”.

■ CONTROL FOR HDMI (Control for HDMI)

Lets you turn the Control for HDMI function on or off. For details, see “Control for HDMI” (page 64).

■ NAME IN (Naming inputs)

Lets you set the name of inputs. For details, see “Naming inputs” (page 73).

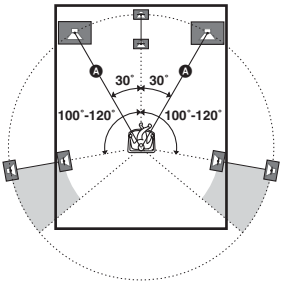
Settings for the system (SYSTEM menu)

You can use the SYSTEM menu to set the distance of the speakers connected to this system.
Select “7-SYSTEM” in the amplifier menus. For details on adjusting the parameters, see “Navigating through menus” (page 38) and “Overview of the menus” (page 39).

SYSTEM menu parameters

■ FRT DIST. (Front speaker distance)

Lets you set the distance from your listening position to the front speaker (Ⓐ). If both front speakers are not placed an equal distance from your listening position, set the distance to the closest speaker.



■ CNT DIST. (Center speaker distance)

Lets you set the distance from your listening position to the center speaker.

■ SL DIST. (Surround left speaker distance)

■ SR DIST. (Surround right speaker distance)

Lets you set the distance from your listening position to the surround speakers.

continued

Tip

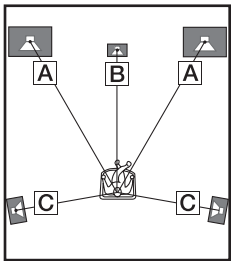
The distance between the center speaker and the listening position [B] cannot be more than 5 feet closer than the one between the listening position and the front speaker [A]. Place the speakers so that the difference in the length of [B] in the following diagram is no more than 5 feet closer than the length of [A].

Example: Adjust the distance [B] to 15 feet or more when the distance [A] is 20 feet.

Also, the distance between the surround speakers and the listening position [C] cannot be more than 15 feet closer than the distance between the listening position and the front speakers [A]. Place the speakers so that the difference in the length of [C] in the following diagram is no more than 15 feet closer than the length of [A].

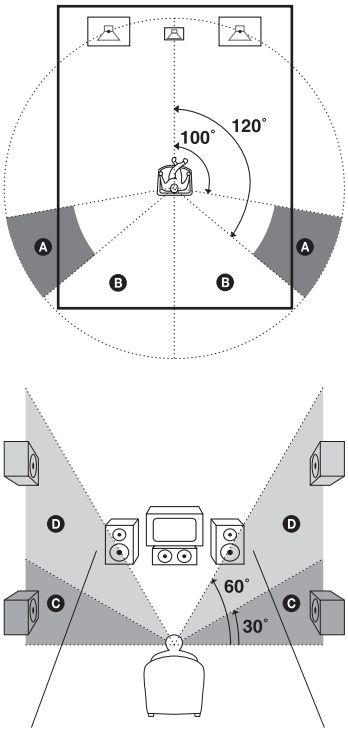
Example: Adjust the distance [C] to 5 feet or more when the distance [A] is 20 feet.

This is important because incorrect speaker placement is not conductive to the enjoyment of surround sound. Please note that placing the speakers closer than the required will cause a delay in the output of the sound from that speaker. In other words, the speaker will sound like it is farther away. Adjusting these parameter while listening to the sound often results in much better surround sound. Give it try!



■ SUR POS. (Surround speaker position)

Lets you specify the location of your surround speakers for proper implementation of the surround effects in the Cinema Studio EX modes (page 50).



- BEHD/HI
  Select if the location of your surround speakers corresponds to sections Ⓑ and Ⓓ.
- BEHD/LO
  Select if the location of your surround speakers corresponds to sections Ⓑ and Ⓒ.
- SIDE/HI
  Select if the location of your surround speakers corresponds to sections Ⓐ and Ⓓ.
- SIDE/LO
  Select if the location of your surround speakers corresponds to sections Ⓐ and Ⓒ.

Tip

Surround speaker position is designed specifically for implementation of the Cinema Studio EX modes. For other sound fields, speaker position is not so critical.

Those sound fields were designed under the premise that the surround speakers would be located behind the listening position, but presentation remains fairly consistent even with the surround speakers positioned at a rather wide angle. However, if the speakers are pointing toward the listener from the immediate left and right of the listening position, the surround effects become unclear unless set to "SIDE/LO" or "SIDE/HI".

Nevertheless, each listening environment has many variables, such as wall reflections, and you may obtain better results using "BEHD/HI" if your speakers are located high above the listening position, even if they are located to the immediate left and right.

Therefore, although it may result in a setting contrary to the above explanation, we recommend that you playback multi channel surround encoded software and select the setting that provides a good sense of spaciousness and that best succeeds in forming a cohesive space between the surround sound from the surround speakers and the sound of the front speakers. If you are not sure which sounds best, select "BEHD/LO" or "BEHD/HI" and then use the speaker distance parameter and speaker level adjustments to obtain proper balance.

■ DIMMER (Brightness of the display)

Lets you adjust the brightness in 3 steps.

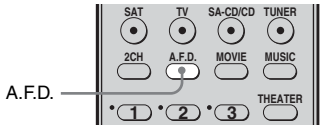
Calibrating the appropriate settings automatically

(A. CAL menu)

For details on Auto Calibration, see "7: Calibrating the appropriate settings automatically (AUTO CALIBRATION)" (page 29).

Enjoying Dolby Digital and DTS Surround sound (AUTO FORMAT DIRECT)

The Auto Format Direct (A.F.D.) mode allows you to listen to higher fidelity sound and select the decoding mode for listening to a 2 channel stereo sound as multi channel sound.



Press A.F.D. repeatedly to select the sound field you want.

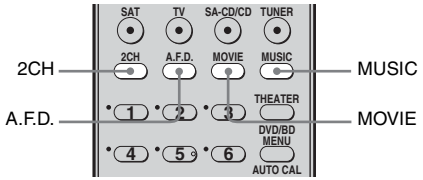
For details, see “Types of A.F.D. mode” below.

Types of A.F.D. mode

A.F.D. mode [Display]	Multi channel audio after decoding	Effect
A.F.D. AUTO [A.F.D. AUTO]	(Detecting automatically)	Presents the sound as it was recorded/encoded without adding any surround effects. However, this receiver will generate a low frequency signal for output to the sub woofer when there is no LFE signals.
PRO LOGIC [DOLBY PL]	4 channel	Performs Dolby Pro Logic decoding. The source recorded in 2 channel format is decoded into 4.1 channels.
PRO LOGIC II MOVIE [PLII MV]	5 channel	Performs Dolby Pro Logic II Movie mode decoding. This setting is ideal for movies encoded in Dolby Surround. In addition, this mode can reproduce sound in 5.1 channel for watching videos of overdubbed or old movies.
PRO LOGIC II MUSIC [PLII MS]	5 channel	Performs Dolby Pro Logic II Music mode decoding. This setting is ideal for normal stereo sources such as CDs.
MULTI STEREO [MULTI ST.]	(Multi Stereo)	Outputs 2 channel left/right signals from all speakers.

Selecting a pre-programmed sound field

You can take advantage of surround sound simply by selecting one of the receiver's pre-programmed sound fields. They bring the exciting and powerful sound of movie theaters and concert halls into your home.



Press MOVIE repeatedly to select a sound field for movies or press MUSIC repeatedly to select a sound field for music.

For details, see "Types of sound field available" (page 50).

continued

Types of sound field available

Sound field for	Sound field [Display]	Effect
Movie	CINEMA STUDIO EX A DCS [C.ST.EX A]	Reproduces the sound characteristics of the Sony Pictures Entertainment "Cary Grant Theater" cinema production studio. This is a standard mode, great for watching almost any type of movie.
	CINEMA STUDIO EX B DCS [C.ST.EX B]	Reproduces the sound characteristics of the Sony Pictures Entertainment "Kim Novak Theater" cinema production studio. This mode is ideal for watching science-fiction or action movies with lots of sound effects.
	CINEMA STUDIO EX C DCS [C.ST.EX C]	Reproduces the sound characteristics of the Sony Pictures Entertainment scoring stage. This mode is ideal for watching musicals or films where orchestra music is featured in the soundtrack.
Music	HALL [HALL]	Reproduces the acoustics of a classical concert hall.
	JAZZ CLUB [JAZZ]	Reproduces the acoustics of a jazz club.
	LIVE CONCERT [CONCERT]	Reproduces the acoustics of a 300-seat live house.
	STADIUM [STADIUM]	Reproduces the feeling of a large open-air stadium.
	SPORTS [SPORTS]	Reproduces the feeling of sports broadcasting.
	PORTABLE AUDIO ENHANCER [PORTABLE]	Reproduces a clear enhanced sound image from your portable audio device. This mode is ideal for MP3 and other compressed music.
Headphone*	HEADPHONE 2CH [HP 2CH]	This mode is selected automatically if you use headphones when 2 channel mode (page 51)/A.F.D. mode (page 48) is selected. Standard 2 channel stereo sources completely bypass the sound field processing and multi channel surround formats are downmixed to 2 channels.
	HEADPHONE THEATER DCS [HP THEA]	This mode is selected automatically if you use headphones when a sound field for movie/music is selected. It allows you to experience a theater-like environment while listening through a pair of headphones.

* You can only select this sound field if the headphones are connected to the receiver.

Notes

- The effects provided by the virtual speakers may cause increased noise in the playback signal.
- When listening with sound fields that employ the virtual speakers, you will not be able to hear any sound coming directly from the surround speakers.
- This function does not work when
  - signals with a sampling frequency of more than 48 kHz are input.
  - multi channel Linear PCM signals are received via an HDMI jack.

Tips

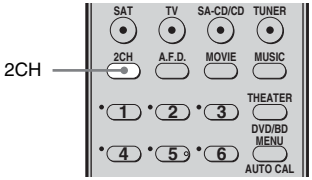
- You can identify the encoding format of DVD software, etc., by looking at the logo on the package.
- Sound fields with DCS mark use DCS technology. See "Glossary" (page 77).

To turn off the surround effect for movie/music

Press 2CH to select "2CH ST." or press A.F.D. repeatedly to select "A.F.D. AUTO".

Using only the front speakers and sub woofer (2CH STEREO)

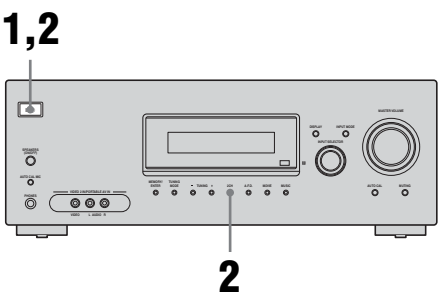
In this mode, the receiver outputs the sound from the front left/right speakers and the sub woofer.
When multi channel surround formats are input, the signals are downmixed to 2 channel with bass frequencies being output from the sub woofer.
When standard 2 channel stereo sources are input, the receiver's bass redirection circuitry will be activated. The front channel bass frequencies will be output from the sub woofer.



Press 2CH.

Resetting sound fields to the initial settings

Be sure to use the buttons on the receiver for this operation.



1 Press I/⏻ to turn off the receiver.

2 While holding down 2CH, press I/⏻.

"S.F. CLR." appears on the display and all sound fields are reset to their initial setting.

Listening to FM/AM radio

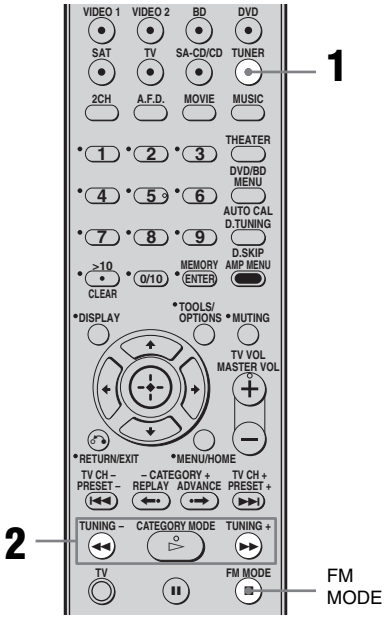
You can listen to FM and AM broadcasts through the built-in tuner. Before operation, make sure you have connected the FM and AM antennas to the receiver (page 27).

Tip

The tuning scale is:
FM : 100 kHz
AM : 10 kHz*

* The AM tuning scale can be changed (page 85).

Automatic tuning



1 Press TUNER repeatedly to select the FM or AM band.

2 Press TUNING + or TUNING –.

Press TUNING + to scan from low to high; press TUNING – to scan from high to low.
The receiver stops scanning whenever a station is received.

Using the controls on the receiver

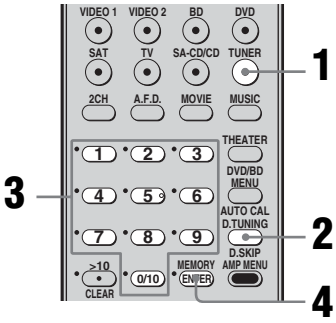
1 Turn INPUT SELECTOR to select the FM or AM band.
2 Press TUNING MODE repeatedly to select "AUTO T.".
3 Press TUNING + or TUNING –.

In case of poor FM stereo reception

If the FM stereo reception is poor and "ST" flashes on the display, select monaural audio so that the sound will be less distorted.
Press FM MODE repeatedly until the "MONO" indicator lights up on the display. To return to stereo mode, press FM MODE repeatedly until the "MONO" indicator on the display lights off.

Direct tuning

Enter the frequency of a station directly by using the numeric buttons.



1 Press TUNER repeatedly to select the FM or AM band.

You can also use INPUT SELECTOR on the receiver.

2 Press D.TUNING.

3 Press the numeric buttons to enter the frequency.

Example 1: FM 102.50 MHz
Select 1 ➡ 0 ➡ 2 ➡ 5 ➡ 0
Example 2: AM 1,350 kHz
Select 1 ➡ 3 ➡ 5 ➡ 0

Tip

If you have tuned in an AM station, adjust the direction of the AM loop antenna for optimum reception.

4 Press ENTER.

You can also use MEMORY/ENTER on the receiver.

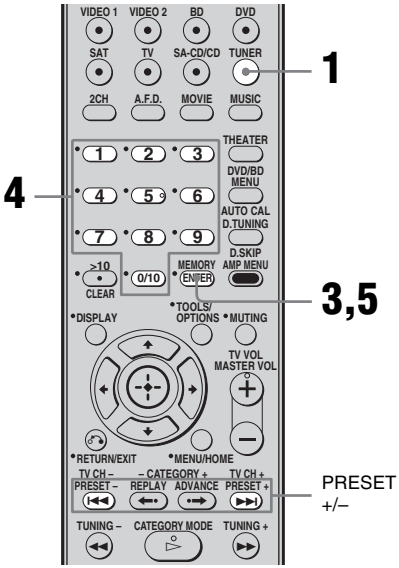
If you cannot tune in a station

Make sure you have entered the right frequency. If not, repeat steps 2 to 4. If you still cannot tune in a station, the frequency is not used in your area.

Presetting radio stations

You can preset up to 30 FM stations and 30 AM stations. Then you can easily tune in the stations you often listen to.

Presetting radio stations



1 Press TUNER repeatedly to select the FM or AM band.

You can also use INPUT SELECTOR on the receiver.

2 Tune in the station that you want to preset using Automatic Tuning (page 52) or Direct Tuning (page 53).

In case of poor FM stereo reception, switch the FM reception mode (page 52).

continued

3 Press MEMORY.

You can also use MEMORY/ENTER on the receiver.
"MEMORY" lights up for a few seconds. Perform steps 4 and 5 before "MEMORY" goes out.

4 Press the numeric buttons to select a preset number.

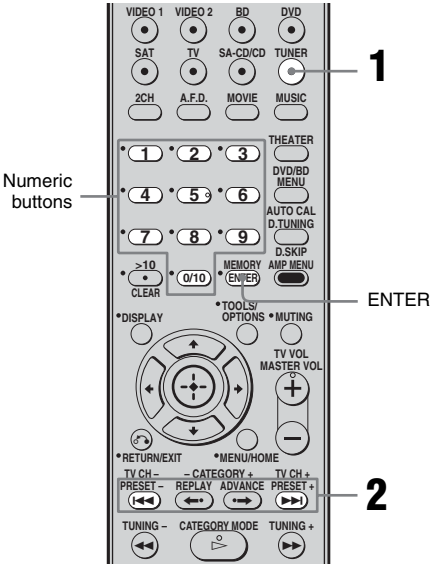
You can also press PRESET + or PRESET – to select a preset number.
If "MEMORY" goes out before you select the preset number, start again from step 3.

5 Press ENTER.

You can also use MEMORY/ENTER on the receiver.
The station is stored as the selected preset number.
If "MEMORY" goes out before you press ENTER, start again from step 3.

6 Repeat steps 1 to 5 to preset another station.

Tuning to preset stations



1 Press TUNER repeatedly to select the FM or AM band.

2 Press PRESET + or PRESET – repeatedly to select the preset station you want.

Each time you press the button, you can select a preset station as follows:

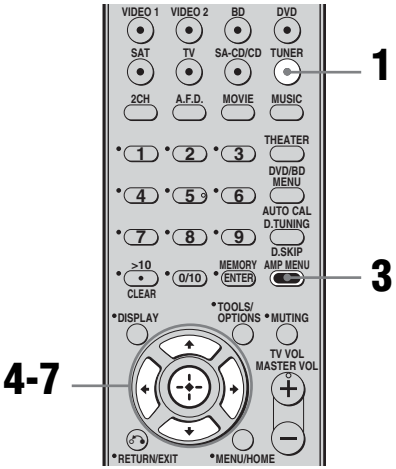
01 ⟷ 02 ⟷ ... ⟷ 30 ⟷ 01 ⟷ ...

You can also press the numeric buttons to select the preset station you want. Then, press ENTER to enter the selection.

Using the controls on the receiver

1 Turn INPUT SELECTOR to select the FM or AM band.
2 Press TUNING MODE repeatedly to select "PRESET T.".
3 Press TUNING + or TUNING – repeatedly to select the preset station you want.

Naming preset stations



1 Press TUNER repeatedly to select the FM or AM band.

You can also use INPUT SELECTOR on the receiver.

2 Tune in the preset station you want to create an index name for (page 54).

3 Press AMP MENU.

"1-LEVEL" appears on the display.

4 Press ↑/↓ repeatedly to select "4-TUNER".

5 Press ⊕ or → to enter the menu.

6 Press ↑/↓ repeatedly to select "NAME IN".

7 Press ⊕ or → to enter the parameter.

The cursor flashes and you can select a character. Follow the procedure given in "To create an index name" below.

To create an index name

1 Use ↑/↓/←/→ to create an index name.
Press ↑/↓ to select a character, then press ←/→ to move the cursor to the next position.

If you made a mistake

Press ←/→ until the character you want to change flashes, then press ↑/↓ to select the correct character.

Tips

- You can select the character type as follows by pressing ↑/↓.
  Alphabet (upper case) → Numbers → Symbols
- To enter a blank space, press → without selecting a character.

2 Press ⊕.
The entered name is registered.

Listening to the XM Radio

About XM Radio for U.S. Products

XM is America's number one satellite radio company. Broadcasting live daily from studios in Washington, DC, New York City, Chicago, the Country Music Hall of Fame in Nashville, Toronto and Montreal, XM's 2007 lineup includes more than 170 digital channels of choice from coast to coast: commercial-free music, premier sports, news, talk radio, comedy, children's and entertainment programming; and the most advanced traffic and weather information. For more information or to subscribe in the U.S., visit xmradio.com or call Listener Care at 1-800-XMRADIO (1-800-967-2346).

XM Ready® Legal for U.S. Products

XM monthly service subscription sold separately. XM Mini-Tuner and Home Dock required (each sold separately) to receive XM service. It is prohibited to copy, decompile, disassemble, reverse engineer, hack, manipulate or otherwise make available any technology or software incorporated in receivers compatible with the XM Satellite Radio System. Installation costs and other fees and taxes, including a one-time activation fee may apply. All fees and programming subject to change. Channels with frequent explicit language are indicated with an XL. Channel blocking is available for XM radio receivers by calling 1-800-XMRADIO (1-800-967-2346). Subscriptions subject to Customer Agreement available at xmradio.com. XM service only available in the 48 continuous United States. ©2007 XM Satellite Radio Inc. All rights reserved.

XM Ready® Subscriptions for U.S. Products

Once you have installed the XM Mini-Tuner Dock, inserted the XM Mini-Tuner, connected the XM Dock to your XM Ready® home audio system, and installed the antenna, you are ready to subscribe and begin receiving XM programming. There are three places to find your eight character XM Radio ID: On the XM Mini-Tuner, on the XM Mini-Tuner package, and on XM Channel 0. Record the Radio ID in the following eight squares for reference.

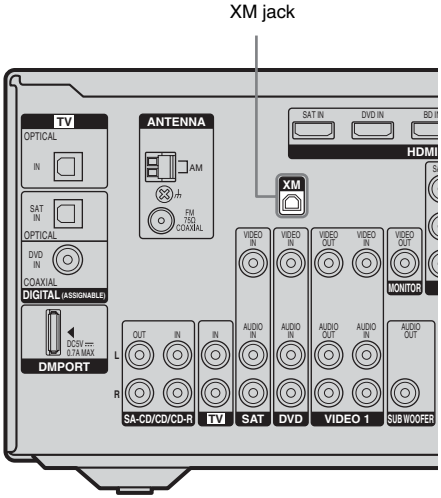
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Note

The XM Radio ID does not use the letters "I", "O", "S" or "F". Activate your XM Radio service in the U.S. online at http://activate.xmradio.com or call 1-800-XMRADIO (1-800-967-2346). You will need a major credit card. XM will send a signal from the satellites to activate the full channel lineup. Activation normally takes 10 to 15 minutes, but during peak busy periods you may need to keep your XM Ready home audio system on for up to an hour. When you can access the full lineup on your XM Ready home audio system you are done.

Connecting the XM Radio

Before operating the system, connect the XM Mini-Tuner and Home Dock to the XM jack.

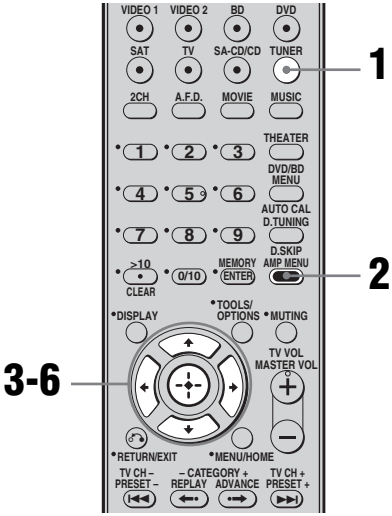


Note

To ensure optimal reception of XM's satellite signal, move your antenna to various window locations around your home to see where the best reception will be received. Most XM customers place the antenna in a south-facing window with a clear view to the sky.

Aiming the XM Antenna

You can use "XM ANT" in the TUNER menu to help you aim the antenna for optimal signal reception.



1 Press TUNER repeatedly to select "XM RADIO".

You can also use INPUT SELECTOR on the receiver.

2 Press AMP MENU.

"1-LEVEL" appears on the display.

3 Press ↑/↓ repeatedly to select "4-TUNER".

4 Press ⊕ or → to enter the menu.

5 Press ↑/↓ repeatedly to select "XM ANT".

6 Press ⊕ or → to enter the parameter.

continued

7 While checking the parameter, aim your antenna to where the best reception will be received.

For details on the parameter, see “Signal strength” below.

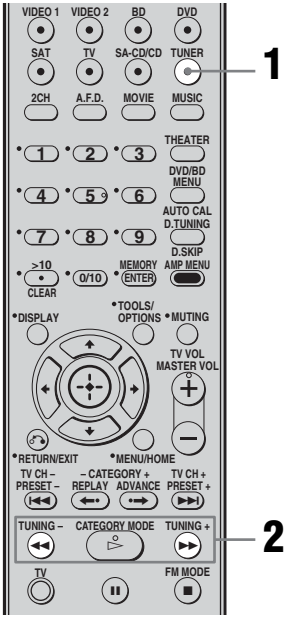
Signal strength

Signal strength	Signal type	
	Satellite	Terrestrial
Good	S–3	T–3
Marginal	S–2	T–2
Weak	S–1	T–1
None	S–0	T–0

When you have finished

Press AMP MENU.

Checking the XM Radio ID



1 Press TUNER repeatedly to select “XM RADIO”.

You can also use INPUT SELECTOR on the receiver.

2 Press TUNING + or TUNING – to select channel 0.

You can also press TUNING MODE on the receiver to select “AUTO T.”, and then press TUNING + or TUNING – to select channel 0.

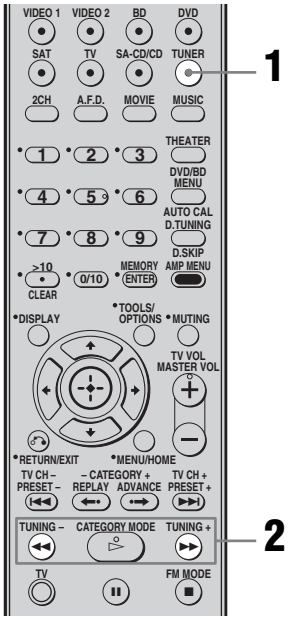
3 Check the XM Radio ID on the display and write it in the space provided here.

ID:_____

If you cannot read the characters or numbers on the display, refer to the following table.

Display	Description
2	2 (two)
5	5 (five)
6	6 (six)
8	8 (eight)
0	0 (zero)
A	A
B	B
D	D
G	G
H	H
K	K
M	M
Q	Q
Z	Z

Receiving XM Radio broadcasts



1 Press TUNER repeatedly to select “XM RADIO”.

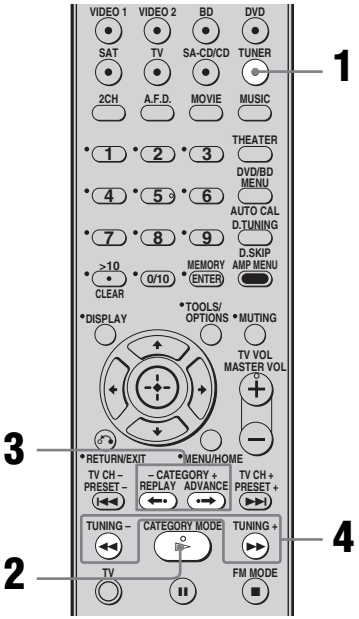
You can also use INPUT SELECTOR on the receiver.

2 Press TUNING + or TUNING – to select a channel.

You can also press TUNING MODE on the receiver to select “AUTO T.”, and then press TUNING + or TUNING – to select a channel.

Selecting channels from a category (CATEGORY TUNING)

You can select a channel from one category or all the categories by changing the category mode.



1 Press TUNER repeatedly to select “XM RADIO”.

You can also use INPUT SELECTOR on the receiver.

2 Press CATEGORY MODE repeatedly to select “ONE CAT”.

- ALL CAT: You can select a channel from all the categories. The initial setting is “ALL CAT”.
- ONE CAT: You can select a channel from one category. “CAT” lights up on the display when “ONE CAT” is selected.

3 Press CATEGORY + or CATEGORY – to select the category you want.

The category is selected and the channel with the lowest number in the specified category is selected.

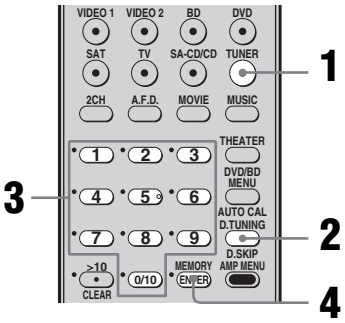
4 Press TUNING + or TUNING – to select the channel.

You can also press TUNING MODE on the receiver to select “AUTO T.”, and then press TUNING + or TUNING – to select a channel.

Notes

- When you select a channel in the “ONE CAT” mode, the channel you selected may not be the one in the category you want. This is because one channel may belong to more than one category.
- If you press CATEGORY + or CATEGORY – in the “ALL CAT” mode, the first channel of the next or previous category is selected (CATEGORY SKIP).

Selecting channels by inputting the channel number directly (DIRECT TUNING)



1 Press TUNER repeatedly to select “XM RADIO”.

You can also use INPUT SELECTOR on the receiver.

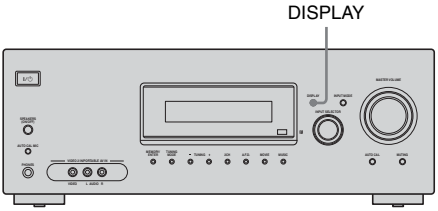
2 Press D.TUNING.

3 **Press the numeric buttons to enter the channel number.**

4 **Press ENTER.**

You can also use MEMORY/ENTER on the receiver.
The selected channel is tune in.

Displaying the XM Radio information on the front panel display



Press DISPLAY on the receiver repeatedly.

Each time you press DISPLAY while tuning in the channel, the display changes cyclically as follows:
Channel name ⟶ Channel number ⟶ Category name ⟶ Artist name/Feature ⟶ Song/Program title ⟶ Signal strength ⟶ Sound field type

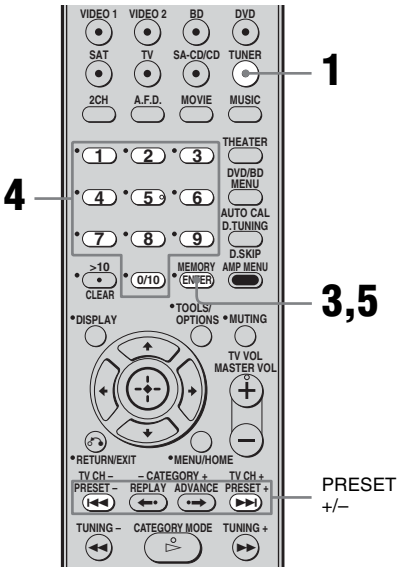
Tip

The preset number is always displayed at the right end of the display.

Presetting XM Radio channels

You can select the channels you want directly by presetting them using the preset numbers. You can preset up to 30 XM Radio channels.

Presetting channels using the preset numbers



1 **Press TUNER repeatedly to select “XM RADIO”.**

You can also use INPUT SELECTOR on the receiver.

2 **Tune in the channel you want to preset.**

For details on selecting channels, see “Listening to the XM Radio” (page 56).

3 **Press MEMORY.**

You can also use MEMORY/ENTER on the receiver.

continued

4 **Press the numeric buttons to select a preset number.**

You can also press PRESET + or PRESET – to select a preset number.

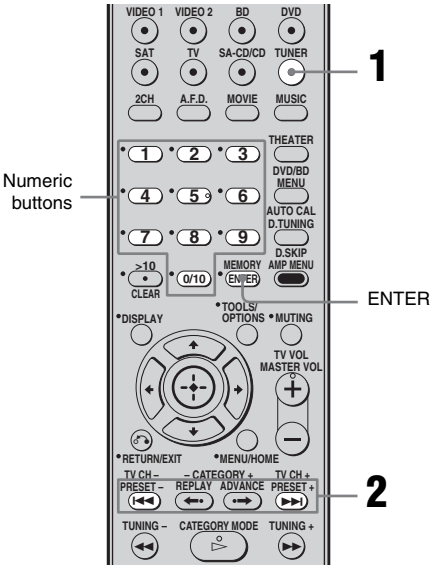
Preset number is available from 1 to 30, and channel 1 is preset for all the preset numbers when you purchase the receiver.

5 **Press ENTER.**

You can also use MEMORY/ENTER on the receiver.

6 **Repeat steps 2 to 5 to preset another channel.**

Selecting the channel by using the preset numbers



1 **Press TUNER repeatedly to select "XM RADIO".**

You can also use INPUT SELECTOR on the receiver.

2 **Press PRESET + or PRESET – repeatedly to select the preset channel you want.**

You can also press the numeric buttons to select the preset channel you want. Then press ENTER to enter the selection.
You can also press TUNING MODE on the receiver to select "PRESET T.", and then press TUNING + or TUNING –.
You can select preset channels from 1 to 30.

Note

The preset channel information will be updated depending on the service provided by the XM Satellite Radio Inc. that you have subscribed to.

XM Radio messages list

Message appears	Explanation	Remedies
ANTENNA	The XM antenna is not connected to the XM Mini-Tuner Dock or the XM antenna cable is damaged.	Check that the XM antenna is connected to the XM Mini-Tuner Dock securely and check the antenna cable for damage. Replace the XM antenna if the cable is damaged.
UNAUTH	You selected an XM channel that is blocked or cannot be received with your XM subscription package.	Consult the latest channel guide at www.xmradio.com for the current list of channels. For information on receiving this channel, visit www.xmradio.com or contact XM Satellite Radio at 1-800-967-2346.
NO SIGNL	The XM Mini-Tuner is not receiving the XM satellite signal. The XM antenna's view of the satellites may be blocked or the antenna is not properly aimed.	Check the antenna for obstructions and reposition the XM antenna to get a better signal reception. To optimize the antenna position, see "Aiming the XM Antenna" (page 57). Refer to the instructions supplied with the XM Mini-Tuner and Home Dock for antenna installation information.
LOADING	The XM Mini-Tuner is acquiring audio or program information from the XM satellite signal. This message can also appear if the signal is too weak.	This message should disappear when the signal is strong. If you often see this message, reposition the XM antenna for better signal reception. To optimize the antenna position, see "Aiming the XM Antenna" (page 57).
OFF AIR	You selected an XM channel that is not currently broadcasting.	Check this XM channel later. In the meantime, select another channel.
– – – –	No artist name or song title is available for this selection.	—
CH UNAVL	The selected channel is not available. The channel may have been reassigned to a different channel number. This message may occur initially with a new radio or a radio that has not received XM's signal for an extended period.	Consult the latest channel guide at www.xmradio.com for the current list of channels. For a new radio or a radio that has not received XM's signal for an extended period, allow the radio to receive the XM satellite signal for at least 5 minutes and then select the channel again.
XM TUNER	The XM Mini-Tuner is not installed or not fully seated in the XM Mini-Tuner Dock or the XM Mini-Tuner dock is not connected to the receiver.	Confirm the XM Mini-Tuner is fully seated in the dock and check the XM Mini-Tuner dock cable is connected to the receiver.
– –	The preset number entered is an invalid number.	Enter a number from 1 to 30.
SIG-GOOD	The signal strength is good.	Adjust the antenna so that the signal is as strong as possible. For details, see "Aiming the XM Antenna" (page 57).
SIG-MARG	The signal strength is marginal.	
SIG-WEAK	The signal strength is weak.	
SIG-NONE	There is no signal.	

Using the Control for HDMI function for “BRAVIA” Sync

To use “BRAVIA” Sync, set the Control for HDMI function as explained below.
By connecting Sony components that are compatible with the Control for HDMI function with an HDMI cable (not supplied), operation is simplified as follows:

- One-Touch Play: When you play back a component such as a DVD/Blu-ray disc player, the receiver and the TV are turned on automatically and switched to the appropriate HDMI input.
- System Audio Control: While watching TV, you can select to output the sound from the TV speaker or the speakers connected to the receiver.
- System Power Off: When you turn off the TV, the receiver and connected components are also turned off simultaneously.

Control for HDMI is a mutual control function standard used by HDMI CEC (Consumer Electronics Control) for HDMI (High-Definition Multimedia Interface).

The Control for HDMI function does not work in the following cases:

- When you connect the receiver to a component which does not correspond with Sony Control for HDMI function.
- When you connect the receiver and components using other than HDMI connection.

We recommend that you connect the receiver to products featuring “BRAVIA” Sync.

Note

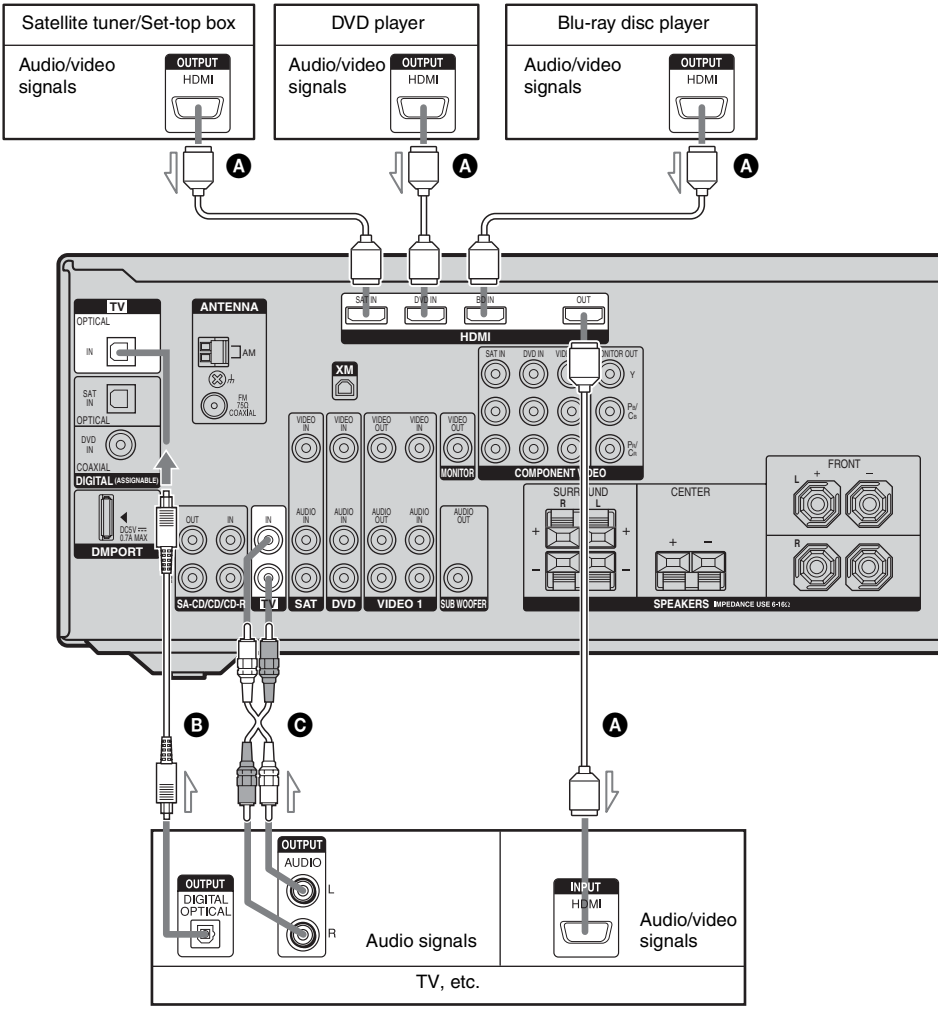
Depending on the connected component, the Control for HDMI function may not work. Refer to the operating instructions of the component.

Connecting a TV and other components

Before connecting the cords, be sure to disconnect the AC power cord.

To enjoy TV multi channel surround sound broadcasting

You can listen to TV multi channel surround sound broadcasting from the speakers connected to the receiver.
Connect the OPTICAL output jack of the TV to the OPTICAL IN jack of the receiver.



A HDMI cable (not supplied)
We recommend that you use a Sony HDMI cable.
B Optical digital cord (not supplied)[a)]
C Audio cord (not supplied)[a)]

[a)] Connect at least one of the audio cords (B or C).

Preparing Control for HDMI function

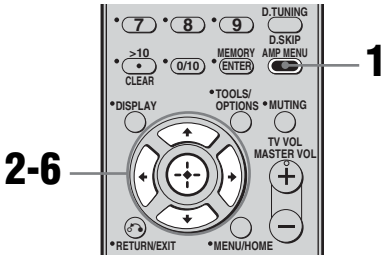
This receiver supports the Control for HDMI-Easy Setting function.
This function is only available for certain types of TV. When you perform the Control for HDMI-Easy Setting on the TV, the Control for HDMI setting on this receiver will automatically change accordingly.
During the Control for HDMI-Easy Setting operation, “CONTROL”, “SCAN FOR” and “HDMI” appear sequentially in the display.
This receiver will automatically change the input to HDMI input. When the setting is completed, “COMPLETE” appears on the display.
For details, refer to the operating instructions of the TV.
If your TV does not support the Control for HDMI-Easy Setting function, do the following procedures. For details on setting the TV and the connected components, refer to the operating instructions of the respective components.

1 Make sure that the receiver is connected to the TV and components (compatible with Control for HDMI function) via HDMI connection.
2 Turn on the receiver, TV and connected components.
3 Set the respective Control for HDMI function for the receiver and TV to on.
See “To set Control for HDMI” (page 67).
For details on setting the TV, refer to the operating instructions of the TV.
4 Select the HDMI input of the receiver and TV to match the HDMI input of the connected component, so that the image from the connected component is displayed.
5 Set the Control for HDMI function for the connected component to on.
If the Control for HDMI function for the connected component is already set to on, you do not need to change the setting.
6 Repeat steps 4 and 5 for other components that you want to use the Control for HDMI function.

Notes

- If you unplug and reconnect the HDMI cable, be sure to repeat steps 1 to 6 above.
- You cannot perform One-Touch Play and System Audio Control during the Control for HDMI-Easy Setting operation.
- Before you do the Control for HDMI-Easy Setting from the TV, be sure to turn on the TV, connected components and receiver.
- If the playback components cannot function after you have made the settings for Control for HDMI-Easy Setting, check the Control for HDMI setting on your TV.
- If the connected components do not support the Control for HDMI-Easy Setting, you need to set the Control for HDMI function for the connected components to on before you perform the Control for HDMI-Easy Setting from the TV.

To set Control for HDMI



1 Press AMP MENU.

"1-LEVEL" appears on the display.

2 Press ↑/↓ repeatedly to select "6-VIDEO".

3 Press ⊕ or → to enter the menu.

4 Press ↑/↓ repeatedly to select "CONTROL FOR HDMI".

"CONTROL FOR HDMI" scrolls across the display, then "CONTROL" appears.

5 Press ⊕ or → to enter the parameter.

6 Press ↑/↓ repeatedly to select "CTRL ON".

Control for HDMI function is activated.

Watching a DVD

(One-Touch Play)

You can enjoy sound and image from the components connected to the receiver via HDMI connections by a simple operation.

Play back a connected component.

The receiver and the TV are turned on automatically and switched to the appropriate HDMI input.

Watching a DVD by simple operation

You can also select a connected component, such as a DVD/Blu-ray disc player using the TV menu. In this case, the receiver and the TV switch to the appropriate HDMI input.

Note

Depending on the TV, the start of the content may not be output.

continued

Enjoying the TV sound from the speakers connected to the receiver (System Audio Control)

You can enjoy the TV sound from the speakers connected to the receiver by a simple operation.
You can operate System Audio Control function using the TV menu. For details, refer to the operating instructions of the TV.
When System Audio Control function is turned on, the receiver will turns on and switches to the appropriate input automatically.
TV sound is output from the speakers connected to the receiver, and the volume of the TV is minimized simultaneously.
You can also use the System Audio Control function as follows.

- If you turn on the receiver while the TV is turned on, the System Audio Control function will automatically be set to on and the TV sound will output from the speakers connected to the receiver. However, if you turn off the receiver, the sound will output from the TV speakers.
- You can adjust the receiver's volume when you adjust the TV volume.

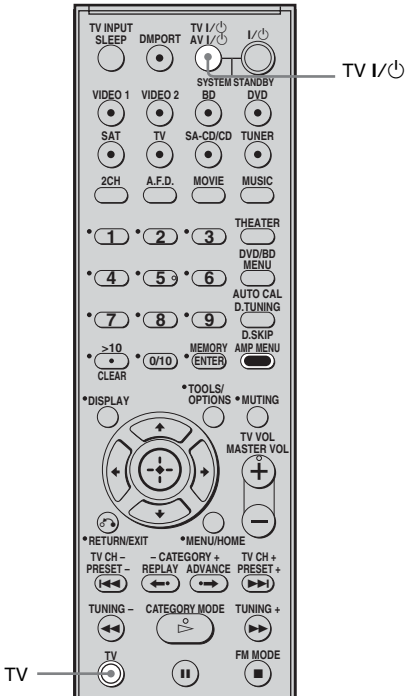
Notes

- If System Audio Control does not function according to your TV setting, refer to the operating instructions of the TV.
- When "CONTROL FOR HDMI" is set to "CTRL ON", the "AUDIO FOR HDMI" settings in the VIDEO menu will be set automatically depending on the System Audio Control settings.
- When you connect a TV that does not have System Audio Control function, the System Audio Control function does not work.
- If the TV is turned on before turning on the receiver, the TV sound will not be output for a moment.
- When you switch to an input other than HDMI or TV, the System Audio Control function will automatically be set to off.
- If you switch from other input to HDMI or TV input, the System Audio Control function will automatically be set to on.

Turning off the receiver with the TV

(System Power Off)

When you turn the TV off by using the POWER button on the TV's remote, the receiver and the connected components turn off automatically.
You can also use the receiver's remote to turn off the TV.



Press TV and TV I/⏻ at the same time.

The TV, receiver and the components connected via HDMI are turned off.

Notes

- Set the TV Standby Synchro to "ON" before using the System Power Off function. For details, refer to the operating instructions of the TV.
- Depending on the status, the connected components may not be turned off. For details, refer to the operating instructions of the connected components.

Switching between digital and analog audio (INPUT MODE)

When you connect components to both digital and analog audio input jacks on the receiver, you can fix the audio input mode to either of them, or switch from one to the other, depending on the type of material you intend to watch.

1 Turn INPUT SELECTOR on the receiver to select the input.

You can also use the input buttons on the remote.

2 Press INPUT MODE repeatedly on the receiver to select the audio input mode.

The selected audio input mode appears on the display.

Audio input modes

■ **AUTO**

Gives priority to digital audio signals when there are both digital and analog connections. If there are no digital audio signals, analog audio signals are selected.

■ **ANALOG**

Specifies the analog audio signals input to the AUDIO IN (L/R) jacks.

Note

Some audio input modes may not be set up depending on the input.

Listening to digital sound from other inputs (DIGITAL ASSIGN)

You can reassign digital audio input that has OPTICAL or COAXIAL (SAT IN, DVD IN) signals to another input when they are not currently being used.

For example, to output the sound source for the DVD player using the OPTICAL IN jack on the receiver:

- Connect the optical output jack of the DVD player to the OPTICAL SAT IN jack of the receiver.
- Assign “SAT OPT” to “DVD” in the “D. ASSIGN” setting.

1 Press AMP MENU.

“1-LEVEL” appears on the display.

2 Press ↑/↓ repeatedly to select “5-AUDIO”.

3 Press ⊕ or → to enter the menu.

4 Press ↑/↓ repeatedly to select “D. ASSIGN”.

5 Press ⊕ or → to enter the parameter.

6 Press ↑/↓ repeatedly to select a vacant digital audio input (“SAT OPT” in the example).

7 Press ⊕ or → to enter your selection.

8 Press ↑/↓ repeatedly to select the input ("SAT- DVD" in the example) you want to assign to the digital audio input jack selected in step 6.

When "DVD" input is selected, the sound of the DVD player will become a digital sound through the OPTICAL SAT IN jack.

The input you can assign varies for each audio input. For details, see the following "Assignable inputs for digital audio input".

Assignable inputs for digital audio input

The initial setting is marked with an underscore.

Digital audio input [Display]	Assignable inputs	Display
COAXIAL DVD IN [DVD COAX]	VIDEO 1	DVD– VD1
	VIDEO 2	DVD– VD2
	BD	DVD– BD
	DVD	DVD– DVD
	SAT	DVD– SAT
	SA-CD/CD	DVD– CD
OPTICAL SAT IN [SAT OPT]	VIDEO 1	SAT– VD1
	VIDEO 2	SAT– VD2
	BD	SAT– BD
	DVD	SAT– DVD
	SAT	SAT– SAT
	SA-CD/CD	SAT– CD

Notes

- You cannot reassign more than one digital audio inputs to the same input.
- You cannot use the digital audio input as the original input when it has been reassigned to another input.
- When you assign the digital audio input, the INPUT MODE setting may change automatically (page 70).

Enjoying the DIGITAL MEDIA PORT (DMPORT)

The DIGITAL MEDIA PORT (DMPORT) allows you to enjoy sound and image from a network system such as a portable audio/video source or computer.

By connecting a DIGITAL MEDIA PORT adapter (not supplied), you can enjoy sound and image from the connected component on the receiver.

For details, refer to the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

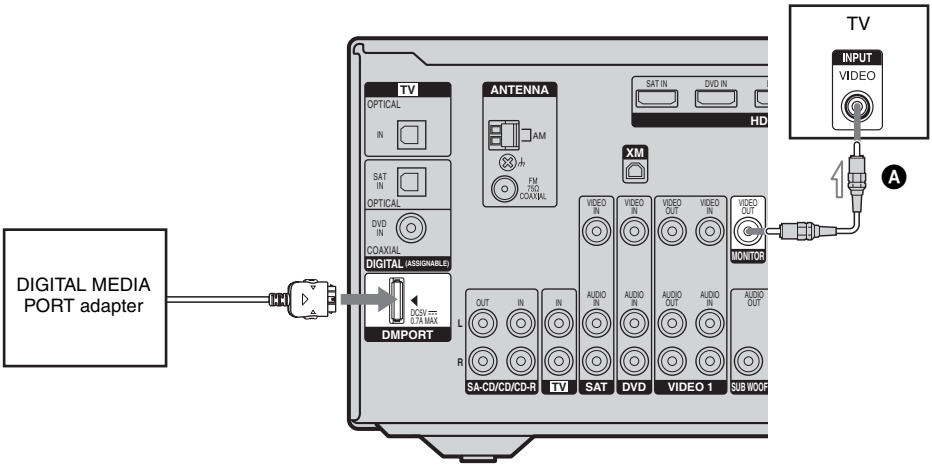
Notes

- Do not connect an adapter other than the DIGITAL MEDIA PORT adapter.
- Do not connect or disconnect the DIGITAL MEDIA PORT adapter while the receiver is turned on.
- Depending on the DIGITAL MEDIA PORT adapter, video output may not be possible.
- The DIGITAL MEDIA PORT adapters are available for purchase depending on the area.

Connecting the DIGITAL MEDIA PORT adapter

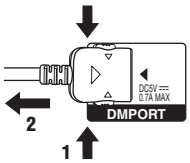
You can listen to the sound and view the images from the component connected through the DIGITAL MEDIA PORT adapter to the DMPORT jack on the receiver.

Before connecting the cords, be sure to disconnect the AC power cord.



A Video cord (not supplied)

To detach the DIGITAL MEDIA PORT adapter from the DMPORT jack



Press and hold both sides of the connector and then pull out the connector.

Notes

- When connecting the DIGITAL MEDIA PORT adapter, be sure the connector is inserted with the arrow mark facing towards the arrow mark on the DMPORT jack.
- Be sure to make DMPORT connections firmly, insert the connector straight in.
- As the connector of the DIGITAL MEDIA PORT adapter is fragile, be sure to handle with care when placing or moving the receiver.

Listening/watching a connected component through DMPORT connection

1 Press DMPORT.

You can also use the INPUT SELECTOR on the receiver to select "DMPORT".

2 Start playback of the connected component.

The sound is played back on the receiver and the image appears on the TV.
For details, refer to the operating instructions supplied with the DIGITAL MEDIA PORT adapter.

Notes

- Depending on the type of DIGITAL MEDIA PORT adapter, you can operate the connected component by using the remote. For details on the remote button operation, see page 10.
- Be sure you have connected the MONITOR VIDEO OUT of the receiver to the TV (page 72).

Tip

When listening to MP3 or other compressed music using a portable audio source, you can enhance the sound. Press MUSIC repeatedly to select "PORTABLE" (page 49).

Naming inputs

You can enter a name of up to 8 characters for inputs and display it on the receiver's display. This is convenient for labeling the jacks with the names of the connected components.

1 Press one of the input buttons to select the input you want to create an index name for.

You can also use INPUT SELECTOR on the receiver.

2 Press AMP MENU.

"1-LEVEL" appears on the display.

3 Press ↑/↓ repeatedly to select "5-AUDIO" or "6-VIDEO".

4 Press ⊕ or → to enter the menu.

5 Press ↑/↓ to select "NAME IN".

6 Press ⊕ or → to enter the parameter.

The cursor flashes and you can select a character. Follow the procedure given in "To create an index name" (page 55).

Changing the display

You can check the sound field, etc., by changing the information on the display.
Be sure to use the buttons on the receiver for this operation.

Press DISPLAY repeatedly.

Each time you press the button, the display changes cyclically as follows.

All inputs except the FM and AM band and XM Radio

Index name of the input[a)] ⟶ Selected input ⟶ Sound field currently applied

FM and AM band

Preset station name[a)] ⟶ Frequency ⟶ Sound field currently applied

XM Radio

Channel name ⟶ Channel number ⟶ Category name ⟶ Artist name/Feature ⟶ Song/program title ⟶ Signal strength ⟶ Sound field currently applied

[a)] Index name appears only when you have assigned one to the input or preset station (page 55, 73). Index name does not appear when only blank spaces have been entered, or it is the same as the input name.

Note

Character or marks may not be displayed for some languages.

Using the Sleep Timer

You can set the receiver to turn off automatically at a specified time.

Press SLEEP repeatedly while the power is on.

Each time you press the button, the display changes cyclically as follows:
2-00-00 ⟶ 1-30-00 ⟶ 1-00-00 ⟶ 0-30-00 ⟶ OFF
When Sleep Timer is activated, the display dims.

Note

If you press any buttons on the remote or receiver after the display dims, the display brightens up. After a while, the display dims again if no button is pressed.

Tip

To check the remaining time before the receiver turns off, press SLEEP. The remaining time appears on the display. If you press SLEEP again, the sleep timer will be canceled.

Recording using the receiver

You can record from an audio/video component using the receiver. Refer to the operating instructions supplied with your recording component.

Recording onto a CD-R

You can record onto a CD-R using the receiver. Refer to the operating instructions supplied with your CD recorder.

1 Press one of the input buttons to select the playback component.

You can also use INPUT SELECTOR on the receiver.

2 Prepare the playback component for playing.

For example, tune in the radio station you want to record.

3 Prepare the recording component.

Insert a CD-R into the CD recorder and adjust the recording level.

4 Start recording on the recording component, then start playback on the playback component.

Note

Sound adjustments do not affect the signal output from the SA-CD/CD/CD-R OUT jacks.

Recording onto a recording media

1 Press one of the input buttons to select the playback component.

You can also use INPUT SELECTOR on the receiver.

2 Prepare the playback component for playing.

For example, insert the video tape you want to copy into the VCR.

3 Prepare the recording component.

Insert a blank video tape, etc. into the recording component (VIDEO 1) for recording.

4 Start recording on the recording component, then start playback on the playback component.

Note

Some sources contain copy guards to prevent recording. In this case, you may not be able to record from the source.

Changing button assignments

You can change the factory settings of the input buttons to suit the components in your system. For example, if you connect a DVD recorder to the VIDEO 1 jacks on the receiver, you can set the VIDEO 1 button on this remote to control the DVD recorder.

1 Hold down the input button of which you want to change the assignment.

Example: Hold down VIDEO 1.

2 Referring to the table below, press the corresponding button for the category you want.

Example: Press 4.
Now you can use the VIDEO 1 button to control the DVD recorder.

Categories and the corresponding buttons

Categories	Press
VCR (command mode VTR 3)[a]	1
VCR (command mode VTR 2)[a]	2
DVD player/DVD recorder (command mode DVD1)[b]	3
DVD recorder (command mode DVD3)[b]	4
CD player	5
Euro Digital Satellite Receiver	6
DVR (Digital CATV terminal)	7
DSS (Digital Satellite Receiver)	8
Blu-ray disc player (command mode BD1)[c]	9
Blu-ray disc recorder (command mode BD3)[c]	0/10
TV	●/>10/ CLEAR
Not assigned	ENTER/ MEMORY

[a] Sony VCRs are operated with a VTR 2 or VTR 3 setting which corresponds to 8 mm and VHS respectively.
[b] Sony DVD recorders are operated with a DVD1 or DVD3 setting. For details, refer to the operating instructions supplied with the DVD recorders.
[c] For details on the BD1 or BD3 setting, refer to the operating instructions supplied with the Blu-ray disc player or Blu-ray disc recorder.

To clear all remote button assignments

Press I/⏻, DMPORT and MASTER VOL – at the same time.
The remote is reset to its factory settings.

Glossary

■ Cinema Studio EX

A surround sound mode that can be regarded as the compilation of Digital Cinema Sound technology, delivers the sound of a dubbing theater using three technologies: “Virtual Multi Dimensions”, “Screen Depth Matching”, and “Cinema Studio Reverberation”.
“Virtual Multi Dimensions”, the virtual speaker technology, creates a virtual multi-surround environment with actual speakers up to 7.1 channels, and brings the surround sound experience of a theater with the latest facilities into your home.
“Screen Depth Matching” reproduces treble attenuation, fullness, and depth of sound usually created in a theater using sound emission from behind the screen. This is then added to the front and center channels.
“Cinema Studio Reverberation” reproduces the sound characteristics of state-of-the-art dubbing theaters and recording studios, including Sony Pictures Entertainment’s dubbing studios. There are three modes, A/B/C, available according to the studio type.

■ Component video

A format for transmitting video signal information consisting of three separate signals: luminance Y, chrominance Pb, and chrominance Pr. High quality pictures, such as DVD video or HDTV pictures, are transmitted more faithfully. The three jacks are color coded green, blue and red.

■ Composite video

A standard format for transmitting video signal information. The luminance signal Y and chrominance signal C are combined and transmitted together.

Digital Cinema Sound (DCS)

A unique sound reproduction technology for home theater developed by Sony, in cooperation with Sony Pictures Entertainment, for enjoying the exciting and powerful sound of movie theaters at home. With this “Digital Cinema Sound” developed by integrating a DSP (Digital Signal Processor) and measured data, the ideal sound field intended by filmmakers can be experienced at home.

■ Dolby Digital

Digital audio encoding/decoding technology developed by Dolby Laboratories, Inc. It consists of front (left/right), center, surround (left/right) and sub woofer channels. It is a designated audio standard for DVD-video and also known as 5.1 channel surround. Since surround information is recorded and reproduced in stereo, more realistic sound with fuller presence is delivered than with Dolby surround.

■ Dolby Pro Logic II

This technology converts 2 channel stereo recorded audio into 5.1 channel for playback. There is a MOVIE mode for movies and MUSIC mode for stereo sources such as music. Old movies encoded in the traditional stereo format can be enhanced with 5.1 channel surround sound.

■ Dolby Surround (Dolby Pro Logic)

Audio processing technology developed by Dolby Laboratories, Inc. Center and mono surround information is matrixed into two stereo channels. When reproduced, audio is decoded and output in 4 channel surround sound. This is the most common audio processing method for DVD-video.

■ DTS Digital Surround

Digital audio encoding/decoding technology for theaters developed by DTS, Inc. It compresses audio less than Dolby Digital, delivering a higher quality sound reproduction.

continued

■ HDMI (High-Definition Multimedia Interface)

HDMI (High-Definition Multimedia Interface) is an interface that supports both video and audio on a single digital connection, allowing you to enjoy high quality digital picture and sound. The HDMI specification supports HDCP (High-bandwidth Digital Contents Protection), a copy protection technology that incorporates coding technology for digital video signals.

■ Sampling frequency

To convert analog audio to digital, analog data should be quantified. This process is called sampling, and the number of times per second the analog data is quantified is called the sampling frequency. A standard music CD stores data quantified at 44,100 times per second, which is expressed as a sampling frequency of 44.1 kHz. Generally speaking, a higher sampling frequency means better sound quality.

■ x.v.Color

x.v.Color is a more familiar term for the xvYCC standard proposed by Sony, and is a trademark of Sony. xvYCC is an international standard for color space in video.
This standard can express a wider color range than the currently used broadcast standard.

Precautions

On safety

Should any solid object or liquid fall into the cabinet, unplug the receiver and have it checked by qualified personnel before operating it any further.

On power sources

- Before operating the receiver, check that the operating voltage is identical with your local power supply.
  The operating voltage is indicated on the nameplate on the back of the receiver.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- If you are not going to use the receiver for a long time, be sure to disconnect the receiver from the wall outlet. To disconnect the AC power cord, grasp the plug itself; never pull the cord.
- One blade of the plug is wider than the other for the purpose of safety and will fit into the wall outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- The AC power cord must be changed only at a qualified service shop.

On heat buildup

Although the receiver heats up during operation, this is not a malfunction. If you continuously use this receiver at a large volume, the cabinet temperature of the top, side and bottom rises considerably. To avoid burning yourself, do not touch the cabinet.

On placement

- Place the receiver in a location with adequate ventilation to prevent heat buildup and prolong the life of the receiver.
- Do not place the receiver near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Do not place anything on top of the cabinet that might block the ventilation holes and cause malfunctions.
- Do not place the receiver near equipment such as a television, VCR, or tape deck. (If the receiver is being used in combination with a television, VCR, or tape deck, and is placed too close to that equipment, noise may result, and picture quality may suffer. This is especially likely when using an indoor antenna. Therefore, we recommend using an outdoor antenna.)
- Use caution when placing the receiver or speakers on surfaces that have been specially treated (with wax, oil, polish, etc.) as staining or discoloration of the surface may result.

On operation

Before connecting other components, be sure to turn off and unplug the receiver.

If you encounter color irregularity on a nearby TV screen

The front and center speakers and the sub woofer are magnetically shielded to allow it to be installed near a TV set. However, color irregularities may still be observed on certain types of TV sets.
As the surround speakers are not magnetically shielded, we recommend that you place the surround speakers slightly further away from the TV set (page 14).

If color irregularity is observed...

Turn off the TV set, then turn it on again after 15 to 30 minutes.

If color irregularity is observed again...

Place the speaker further away from the TV set.

If howling occurs

Reposition the speakers or turn down the volume on the receiver.

On cleaning

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent, such as alcohol or benzine.

If you have any questions or problems concerning your receiver, please consult your nearest Sony dealer.

Troubleshooting

If you experience any of the following difficulties while using the receiver, use this troubleshooting guide to help you remedy the problem.

Audio

There is no sound, no matter which component is selected, or only a very low-level sound is heard.

- Check that the speakers and components are connected correctly and securely.
- Check that both the receiver and all components are turned on.
- Check that MASTER VOLUME is not set to "VOL MIN".
- Check that SPEAKERS (ON/OFF) is not set to "SPK OFF".
- Check that headphones are not connected.
- Press MUTING to cancel the muting function.
- Check that you have selected the correct component with the input buttons.
- The protective device on the receiver has been activated. Turn off the receiver, eliminate the short-circuit problem, and turn on the power again.

There is no sound from a specific component.

- Check that the component is connected correctly to the audio input jacks for that component.
- Check that the cord(s) used for the connection is (are) fully inserted into the jacks on both the receiver and the component.

There is no sound from one of the front speakers.

- Connect a pair of headphones to the PHONES jack to verify that sound is output from the headphones. If only one channel is output from the headphones, the component may not be connected to the receiver correctly. Check that all the cords are fully inserted into the jacks on both the receiver and the component. If both channels are output from the headphones, the front speaker may not be connected to the receiver correctly. Check the connection of the front speaker which is not outputting any sound.
- Make sure you have connected to both the L and R jacks of an analog component, and not only to either the L or R jack. Use an audio cord (not supplied).

There is no sound from digital sources (from COAXIAL or OPTICAL input jack).

- Check that the INPUT MODE is set to "AUTO" (page 70).

The left and right sounds are unbalanced or reversed.

- Check that the speakers and components are connected correctly and securely.
- Adjust the balance parameters using the LEVEL menu.

There is severe hum or noise.

- Check that the speakers and components are connected securely.
- Check that the connecting cords are away from a transformer or motor, and at least 10 feet (3 meters) away from a TV set or fluorescent light.
- Move your audio components away from the TV.
- The plugs and jacks are dirty. Wipe them with a cloth slightly moistened with alcohol.

There is no sound, or only a very low-level sound is heard from the center/ surround speakers.

- Select a CINEMA STUDIO EX mode (page 50).
- Adjust the speaker level (page 33).

There is no sound from the sub woofer.

- Check that the sub woofer is connected correctly and securely.
- Make sure you have turned on your sub woofer.

The surround effect cannot be obtained.

- Make sure the sound field function is on (press MOVIE or MUSIC).
- Sound fields do not function for signals with a sampling frequency of more than 48 kHz.

Dolby Digital or DTS multi channel sound is not reproduced.

- Check that the DVD, etc. you are playing is recorded in Dolby Digital or DTS format.
- When connecting the DVD player, etc., to the digital input jacks of this receiver, check the audio setting (the settings for the audio output) of the connected component.

Recording cannot be carried out.

- Check that the components are connected correctly.
- Select the source component using the input buttons.

There is no sound from the component connected to the DIGITAL MEDIA PORT adapter.

- Adjust the volume of this receiver.
- The DIGITAL MEDIA PORT adapter and/or component is not connected correctly. Turn off the receiver, then reconnect the DIGITAL MEDIA PORT adapter and/or component.
- Check the DIGITAL MEDIA PORT adapter and/or component device to make sure it supports this receiver.

Video

There is no picture or an unclear picture appears on the TV screen or monitor.

- Select the appropriate input using the input buttons.
- Set your TV to the appropriate input mode.
- Move your audio components away from the TV.
- Depending on the DIGITAL MEDIA PORT adapter, video output may not be possible.

Recording cannot be carried out.

- Check that the components are connected correctly.
- Select the source component using the input buttons.

continued

HDMI

The source sound input to the HDMI jack on the receiver is not output from the receiver or the TV speaker.

- Check the HDMI connection.
- You cannot listen to the Super Audio CD by connecting HDMI.
- Depending on the playback component, you may need to set up the component. Refer to the operating instructions supplied with each component.

The source image input to the HDMI jack on the receiver is not output from the TV.

- Check the HDMI connection.
- Depending on the playback component, you may need to set up the component. Refer to the operating instructions supplied with each component.

The Control for HDMI function does not work.

- Check the HDMI connection (page 65).
- Make sure "CONTROL FOR HDMI" is set to "CTRL ON" in the VIDEO menu.
- Make sure the connected component is compatible with the Control for HDMI function.
- Check the Control for HDMI settings on the connected component. Refer to the operating instructions of the connected component.
- Repeat the procedures of "Preparing Control for HDMI function" if you change the HDMI connection, connect/disconnect the AC power cord, or when there is a power failure (page 66).

No sound is output from the receiver and TV speaker while using the System Audio Control function.

- Make sure the TV is compatible with the System Audio Control function.
- If the TV does not have System Audio Control function, set the "AUDIO FOR HDMI" settings in VIDEO menu to
  - "TV+AMP" if you want to listen to the sound from the TV speaker and receiver.
  - "AMP" if you want to listen to the sound from the receiver.
- If you cannot listen to the sound of a component connected to the receiver
  - Select the appropriate input when you want to watch a program on a component connected via HDMI connection to the receiver.
  - Change the TV channel when you want to watch a TV broadcast.
  - Select the component or input you want to watch when you watch a program on the component connected to the TV. Refer to the operating instructions of the TV on this operation.

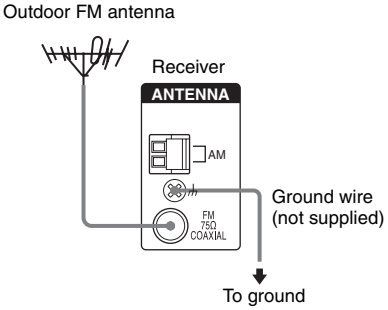
The TV's remote cannot be used to control the connected component when using the Control for HDMI function.

- Change the input of the receiver to the HDMI input connected to the component.

Tuner

The FM reception is poor.

- Use a 75-ohm coaxial cable (not supplied) to connect the receiver to an outdoor FM antenna as shown below. If you connect the receiver to an outdoor antenna, ground it against lightning. To prevent a gas explosion, do not connect the ground wire to a gas pipe.



Radio stations cannot be tuned in.

- Check that the antennas are connected securely. Adjust the antennas and connect an external antenna, if necessary.
- The signal strength of the stations is too weak (when tuning in with automatic tuning). Use direct tuning.
- Make sure you set the tuning interval correctly (when tuning in AM stations with direct tuning).
- No stations have been preset or the preset stations have been cleared (when tuning by scanning preset stations). Preset the stations (page 53).
- Press DISPLAY repeatedly on the receiver so that the frequency appears on the display.

Remote commander

The remote does not function.

- Point the remote at the remote sensor on the receiver.
- Remove any obstacles in the path between the remote and the receiver.
- Replace all the batteries in the remote with new ones, if they are weak.
- Make sure you select the correct input on the remote.

Error messages

If there is a malfunction, the display shows a message. You can check the condition of the system by the message. Refer to the following table to solve the problem. If any problem persists, consult your nearest Sony dealer.
If an error message appears while you perform Auto Calibration, see “Error and warning codes” (page 31) to solve the problem.

PROTECT

Irregular current is output to the speakers. The receiver will automatically turn off after a few seconds. Check the speaker connection and turn on the power again.

continued

If you are unable to remedy the problem using the troubleshooting guide

Clearing the receiver's memory may remedy the problem (page 28). However, note that all memorized settings will be reset to their factory settings and you will have to readjust all settings on the receiver.

If the problem persist

Consult your nearest Sony dealer. Note that if service personnel changes some parts during repair, these parts may be retained.

Reference sections for clearing the receiver's memory

To clear	See
All memorized settings	page 28
Customized sound fields	page 51

Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6 ohm loads, both channels driven, from 120 – 20,000 Hz; rated 90 watts per channel minimum RMS power, with no more than 1% total harmonic distortion from 250 milliwatts to rated output.

Amplifier section

Power Output[1)]

Stereo mode (rated)

(6 ohms 1 kHz, THD 1%)
90 W + 90 W

Surround mode (reference)

(6 ohms 1 kHz, THD 10%)
RMS Output[2)]
FRONT: 140 W per channel
CENTER: 140 W
SURROUND: 140 W per channel

[1)]Measured under 120 V AC, 60 Hz

[2)]Reference power output for front, center and surround speakers. Depending on the sound field settings and the source, there may be no sound output.

Inputs

Analog	Sensitivity: 800 mV/ 50 kohms
Digital (Coaxial)	Impedance: 75 ohms

Outputs (Analog)

AUDIO OUT	Voltage: 800 mV/ 10 kohms
SUB WOOFER	Voltage: 2 V/1 kohm

Tone

Gain levels	±6 dB, 1 dB step

Reproduction frequency range
28 – 20,000 Hz

FM tuner section

Tuning range 87.5 – 108.0 MHz
Antenna FM wire antenna
Antenna terminals 75 ohms, unbalanced
Intermediate frequency
10.7 MHz

AM tuner section

Tuning range
With 10-kHz tuning scale:
530 – 1,710 kHz[3)]
With 9-kHz tuning scale:
531 – 1,710 kHz[3)]
Antenna Loop antenna
Intermediate frequency
450 kHz

[3)] You can change the AM tuning scale to 9 kHz or 10 kHz. After tuning in any AM station, turn off the receiver. While holding down TUNING MODE, press I/⏻. All preset stations will be erased when you change the tuning scale. To reset the scale to 10 kHz (or 9 kHz), repeat the procedure.

Video section

Inputs/Outputs
Video: 1 Vp-p, 75 ohms
COMPONENT VIDEO:
Y: 1 Vp-p, 75 ohms
P_B/C_B: 0.7 Vp-p, 75 ohms
P_R/C_R: 0.7 Vp-p, 75 ohms
80 MHz HD Pass Through

General

Power requirements 120 V AC, 60 Hz
Power output (DIGITAL MEDIA PORT)
DC OUT 5 V, 0.7A MAX
Power consumption 170 W
Power consumption (during standby mode)
0.3 W (when "CONTROL FOR HDMI" in VIDEO menu is set to "CTRL OFF")
Dimensions (w/h/d) (Approx.)
17 × 6 1/4 × 12 5/8 inches (430 × 157.5 × 318 mm) including projecting parts and controls
Mass (Approx.) 17 lb 4 oz (7.8 kg)

Speaker section

- **Front speakers (SS-MSP890)**
- **Center speaker (SS-CNP890)**
- **Surround speakers (SS-SRP890)**

Front/center speaker Full range, Bass reflex, Magnetically shielded
Surround speakers Full range
Speaker unit 3 1/4 inches (80 mm), cone type
Rated Impedance 6 ohms
Dimension (w/h/d) (Approx.)
Front speakers 5 1/8 × 8 1/2 × 5 3/8 inches (130 × 215 × 136 mm) with foot
Center speaker 9 3/4 × 4 3/8 × 5 3/8 inches (245 × 110 × 136 mm) with foot
Surround speakers 4 5/8 × 6 3/4 × 5 5/8 inches (115 × 170 × 141 mm) with foot
Mass (Approx.)
Front speakers 3 lb 2 oz (1.4 kg)
Center speaker 2 lb 14 oz (1.3 kg)
Surround speakers 2 lb 4 oz (1.0 kg)

continued

• Sub woofer (SA-WP890)

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6 ohm loads, from 28 – 200 Hz; rated 120 watts, minimum RMS power, with no more than 1% total harmonic distortion from 250 milliwatts to rated output.

Speaker system	Active subwoofer, Bass reflex, Magnetically shielded
Speaker unit	8 inches (200 mm), cone type
RMS output	200 W
Input	LINE IN (input pin jacks)
Power requirements	120 V AC, 60 Hz
Power consumption	80 W
Dimensions (w/h/d) (Approx.)	10 3/4 × 13 1/4 × 15 inches (270 × 335 × 380 mm) with foot
Mass (Approx.)	18 lb 5 oz (8.3 kg)

Supplied speakers

- Front speakers (2)
- Center speaker (1)
- Surround speakers (2)
- Sub woofer (1)

Supplied accessories

Operating instructions (this manual)

Quick Setup Guide (1)

FM wire antenna (1)

AM loop antenna (1)

Monaural audio cord (1)

Speaker cords

- Long (2)
- Short (3)

Footpads

- Speakers (20)
- Sub woofer (4)

Remote commander (RM-AAU021) (1)

R6 (size-AA) batteries (2)

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Design and specifications are subject to change without notice.

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Video game
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